# CANON NEW F-1

## SERVICE MANUAL

## EXPLODED VIEWS

## AND

## PARTS LIST

**CANON INC. JAPAN**

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## Introduction

The NEW F-1 is the base of a completely new Integrated Functional System. It is based on the original F-1 but utilizing many advances in electronics, precision machining and precision optics made since the original F-1 was developed ten years ago.

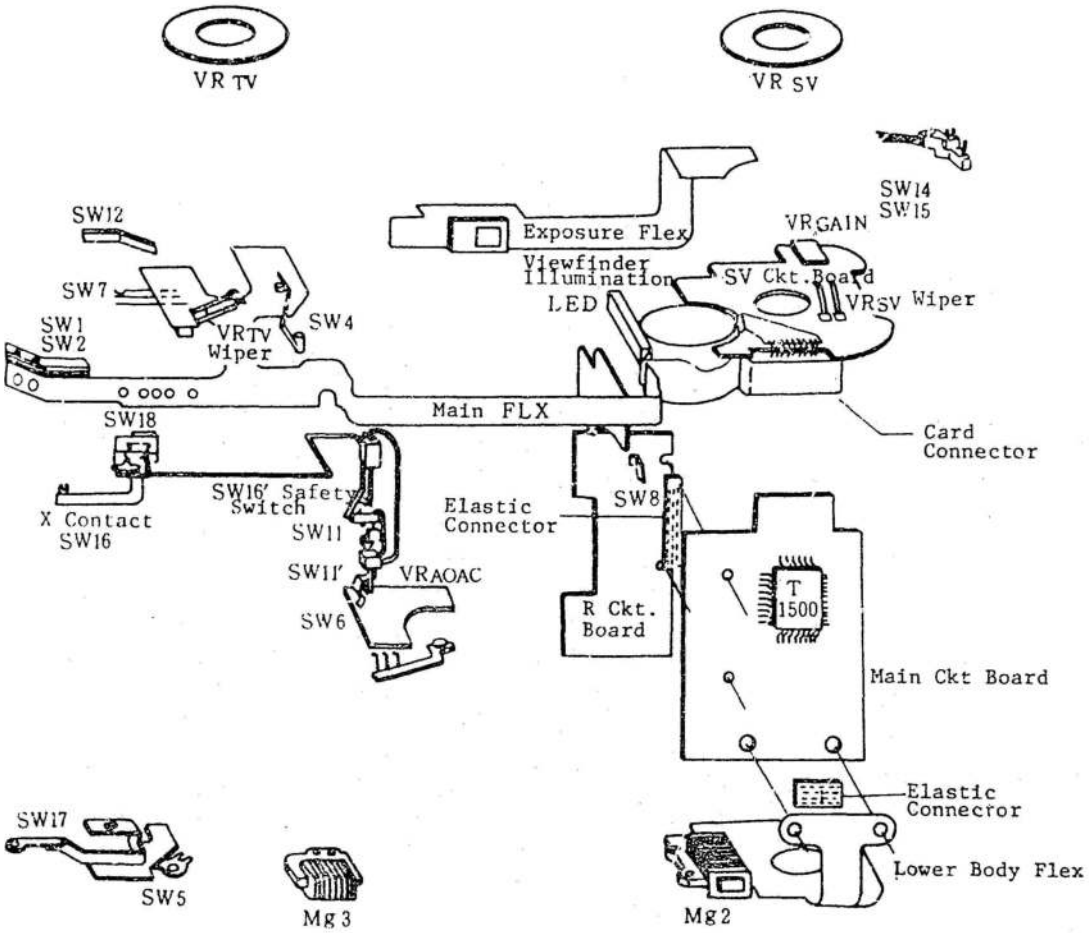
The following considerations should be kept in mind when repairing the New F-1:

1. To maintain complete interchangeability between the camera body and the system accessories, repair personnel must understand the interfaces (mechanical and electronic) between the body and accessories. They must also be familiar with repair standards, checking, adjustment and tools maintenance procedures.
2. Preventive maintenance (lubrication, adjustment and parts replacement) are necessary to insure the reliability of the NEW F-1.

## Special Repair Instructions

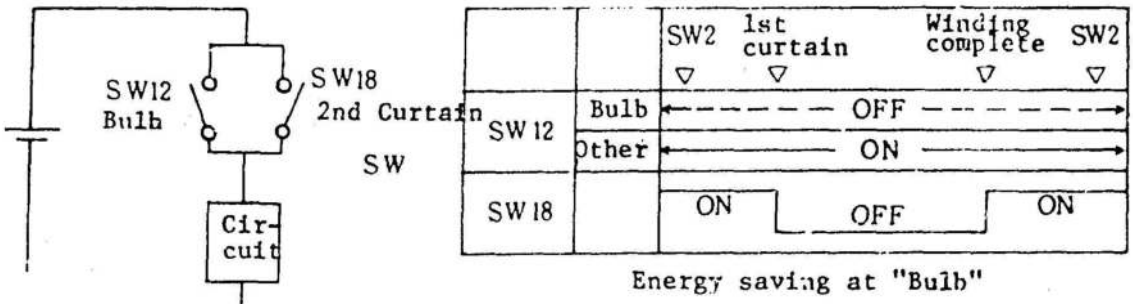
1. Many of the electrical contacts in the camera are molded into plastic insulators. When making solder connections, the soldering time should be kept as short as possible.
2. 3% silver solder should be used to solder the IC's.
3. Many bearing balls are used in the winding mechanism. Be careful during assembly and disassembly to insure that no balls get lost in surrounding mechanisms.
4. When the rewind crank is not installed, if the rewind shaft is pushed down past a certain point it becomes impossible to open the back cover without removing certain parts that normally need not be removed. This results in lost time.
5. Be sure that the elastic connectors used to connect the flexible and rigid circuit boards are kept clean and free of contamination.
6. The water and moisture proofing complicates many repair procedures. Take care that they are correctly performed
7. If the tungsten cable is kinked or frayed, repair is difficult and time-consuming. It is much more cost efficient to be careful to not damage the cable than to repair or replace it.
8. The correct adjustment of the AV AE shutter speed indicator output resistor (RM TV2) and the TV AE aperture determination resistor (RAE) are basic to maintaining system interchangeability.

# 1. Switch position and nomenclature

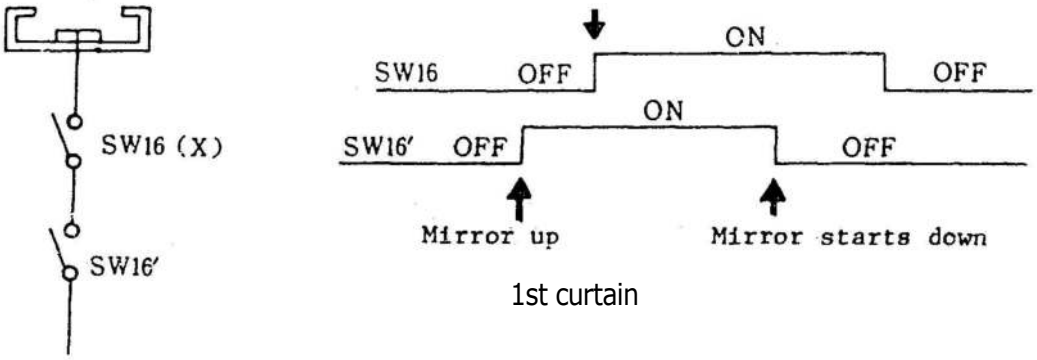



| Name | Operation |
|---|---|
| SW1 Metering Switch | ON: Metering activated |
| SW2 Release Switch | ON: Starts Release sequence |
| SW4 Count Switch | OFF: Shutter exposure timing starts |
| SW5 Winding Complete Switch | OFF: Winding complete |
| SW6 Stop-down (S.D.) Switch | ON: Stopped-down (ganged with SWII[1]) |
| SW7 Self Timer Switch | ON: Self timer activated |
| SW8 Battery Check Switch | ON: Battery Check |
| SWII Lens A-M Switch. | ON: Lens set to "a" mark |
| SW1I' Stop-down switch | OFF: Lens stopped down |
| SW12 Bulb switch | OFF: "Bulb" shutter speed |
| SW14 Timer Switch | ON: Timer Activated |
| SW15 Lamp Switch | ON: Viewfinder illumination on |
| SW16 X Sync Switch | ON: 1st curtain open; OFF: Winding complete |
| SW16' Safety Switch | ON: Mirror up; OFF: Mirror down |
| SW17 Film End Switch | ON: No film on take-up spool |
| SW18 2nd Curtain Switch | OFF: When 2nd curtain starts |

1) SW12 and SW18 Relationship

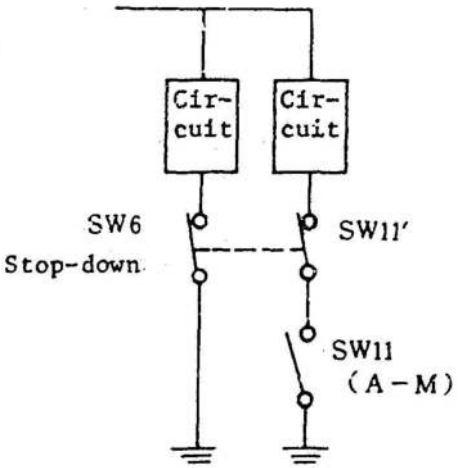



2) SW16 and SW16' Relationship




X contact must turn off after the 2nd curtain closes and before winding is complete.

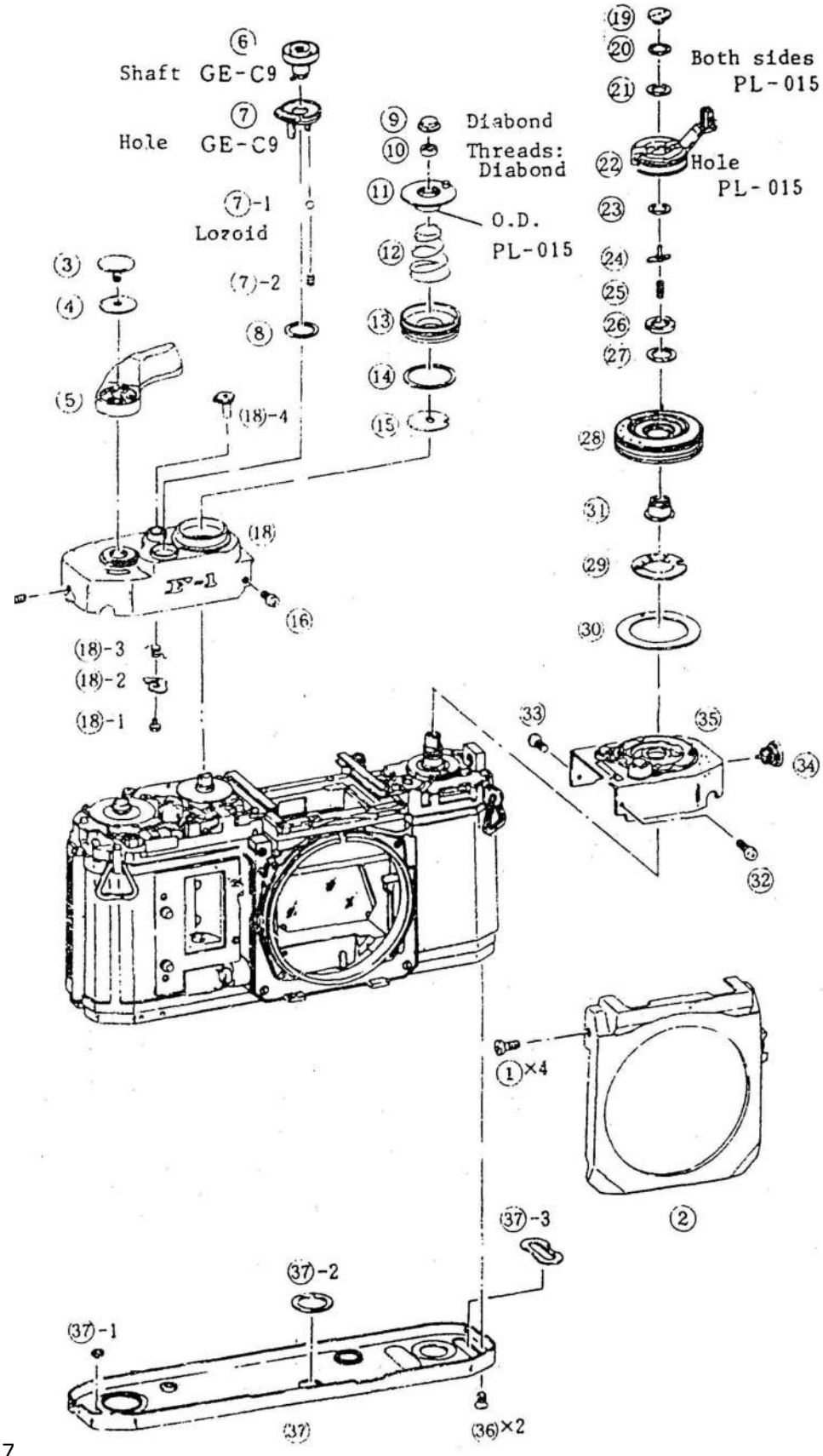
3) SW11, SW6 and SW11' Relationship




| | Lens "A" | | Lens "M" | |
|---|---|---|---|---|
| | Max. | S.D. | Max. | S.D. |
| SW11 | ON | | OFF | |
| SW6,1 | ON | OFF | ON | OFF |

Max: Open aperture S.D.:
Stopped down

## 2. Covers




Numbers 1-37

## Disassembly Notes

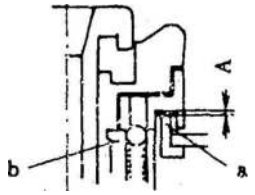
1. Remove the smooth face screw (3) and shutter button (6) with tool (CY9-6131-000).
2. Be careful not to lose detent ball (7)-2 inside the camera.
3. The shutter dial cap (9) is glued in place.
4. Seals (8)(14)(29) and (30) are available in more than one thick ness to insure correct sealing.
5. When the rewind crank (22) is not installed, don't push the rewind shaft all the way down into its holder. (If it is, time will be lost in unnecessary work, because of the click spring.)
6. Press the opening safety stopper while removing the left top cover
7. (35).

## Assembly and Adjustment Notes

1. Put Diabond into the winding lever shaft hole before final installation of the screw (3).
2. Lubricate the shutter button shaft (6) and the interior or the release lock (7) with GE-C9 [See Water-resistant treatment (XIX)].
3. Put Lozoid in the detent groove of the release lock (7).

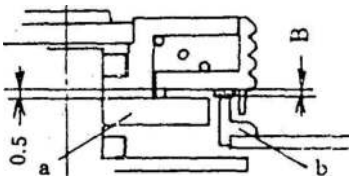
## Assembly and Adjustment Notes

4. Place teflon washer (8) under the lock lever (7). Use a washer that is 0.3mm thicker than the "A" dimension shown below. (Water resistance)



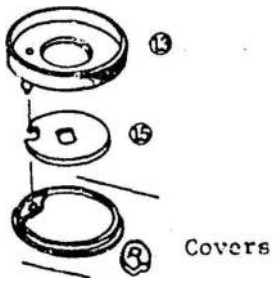

A = l.l-(a-b) mm
Washer t = A +0.3mm

5. The teflon washer (14) used under the shutter dial should be 0.1mm thicker than the "B" dimension shown below. (Water resistance)




B .= 0.5-(a-b)
Washer t = B +0.1mm

6. When installing the shutter dial, align the notch in (15) and the pin in the shutter dial ring (13) with the hole in the top cover. The shutter must be set to "A" before the dial is installed.




Note: Numbers in parentheses in the text correspond to circled numbers one page 6. Disassemble in normal order and reassemble in reverse order.

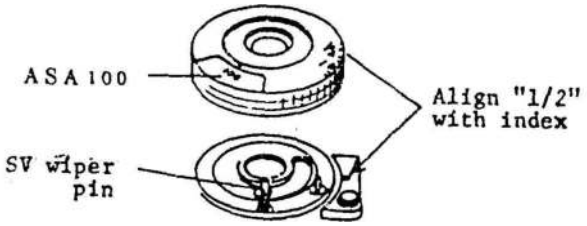
**Assembly and Adjustment Notes**

7. Adjust the rewind crank (22) slip torque by changing the friction washer (21). Torque Limits: 35 to 55 gcm.

8. Lubricate both sides of friction spring (20) with PL-015.

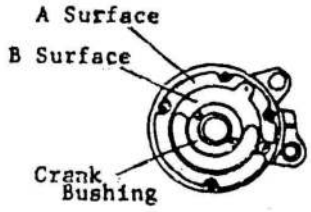
9. Hold the rewind fork. Raise the rewind crank knob and turn in the rewind direction. The clutch should engage within one half turn,

10. To install the ASA Dial, set the SV wiper wiper pin as shown and align the "1/2" on the exposure compensation dial with the index.




11. Check the difference in height between the rewind crank bushing and the "A" and "B" surfaces. Install a slightly thinner washer as indicated below.

    11.1. Washer (30) "A" Difference Check at four points.




| Ex: Difference | | Washer "t" |
|---|---|---|
| 0.15mm | ---→ | 0.1mm |
| 0.2mm | ---→ | 0.2mm |
| 0.1mm | ---→ | No washer |

    11.2. Washer (29) "B" Difference

| Ex: Difference | | Wacher "t" |
|---|---|---|
| 0.55mm | ---→ | 0.5mm |
| 0.4mm | ---→ | 0.4mm |
| 0.35mm | ---→ | No washer |

Note: Numbers in parentheses in the text correspond to circled numbers on page 6. Disassemble in normal order and reassemble in reverse order.

**Assembly and Adjustment Notes**

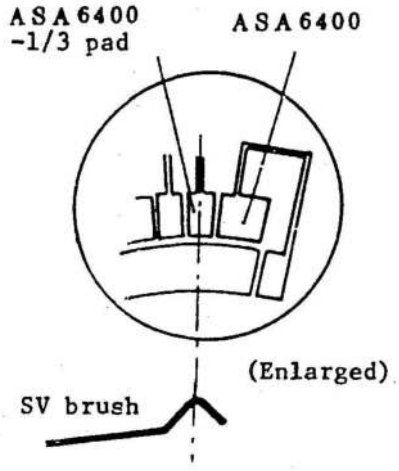
12. SV Brush Adjustment

12.1. Set the SV (ASA.) dial to ASA 6400 -1/3.

12.2. Set the exposure compensation dial at "1".

12.3. Check the position of the brush through the P.C. terminal hole.

Note: Shining the light source (a penlight or the illuminator D or M) through the loupe makes the brush position easier to see.




12.4. Look at the underside of the SV board to check if the brush if the brush is positioned as shown on the ASA 6400 -1/3 pad.

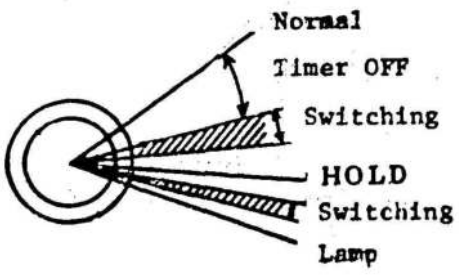
Note: It must stay on the pad at both extremes of dial play.

12.5. Set the dial to ASA 6400 and check that the meter doesn't vary suddenly either up or down.

12.6. If the adjustment is not correct adjust the SV board eccentric.

13. After installing the top cover (35), check the operation of the NORMAL-TIMER-LAMP switch.

It should switch from one function to the next as shown.



## 3. Front panel unit attachment and removal

### Disassembly Notes

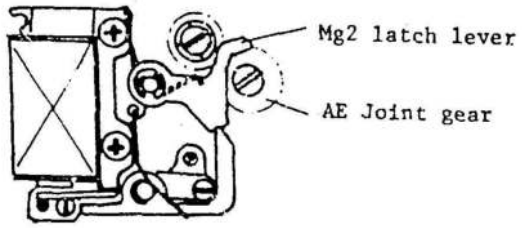
To remove the front panel unit, remove the following parts.

1 Remove the top covers, mount apron and bottom cover.

2 Body coverings (front)

3 Beeper plate

4 Removing the Mg2 latch lever makes the AE joint gear easier to remove.




5 AE Joint Gear

Position the main diaphragm lever so the gear can be removed.

6 Tripod Socket

7 Diaphragm Stricker lever

8 Battery Chamber Cover

9 Pentaprism rails

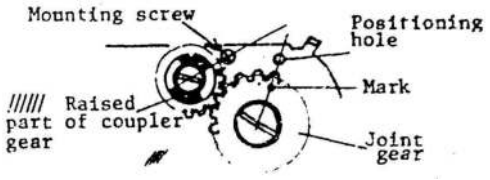
10 Unsolder eleven leads to main circuit board.

11 X sync contact yellow cord

12 Battery Check contact

### Assembly and Adjustment Notes

1 AE Joint Gear and AE Coupler Installation




1.1 Lubricate the joint gear and coupler shafts with Astro-Oil-MIL-G.

1.2 Align the raised portion of the coupler gear with the mounting screw as shown.

1.3 Align the mark on the joint gear with the positioning hole as shown.

2 Front Panel Unit Installation

2.1 Lubricate the marked parts of the mirror charge and signal levers (in the body) with Lozoid.

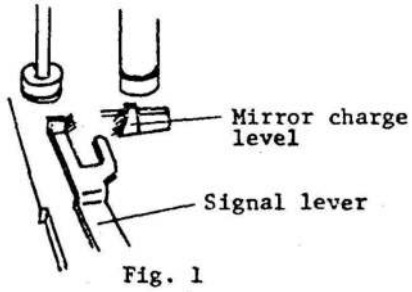



Fig. 1

2.2 Wind until the curtain edge is approximately in the center of the frame.

2.3 In this semi-wound condition, do not move the signal lever (Fig. 1) or Intermediate signal lever (Fig. 4, next page).

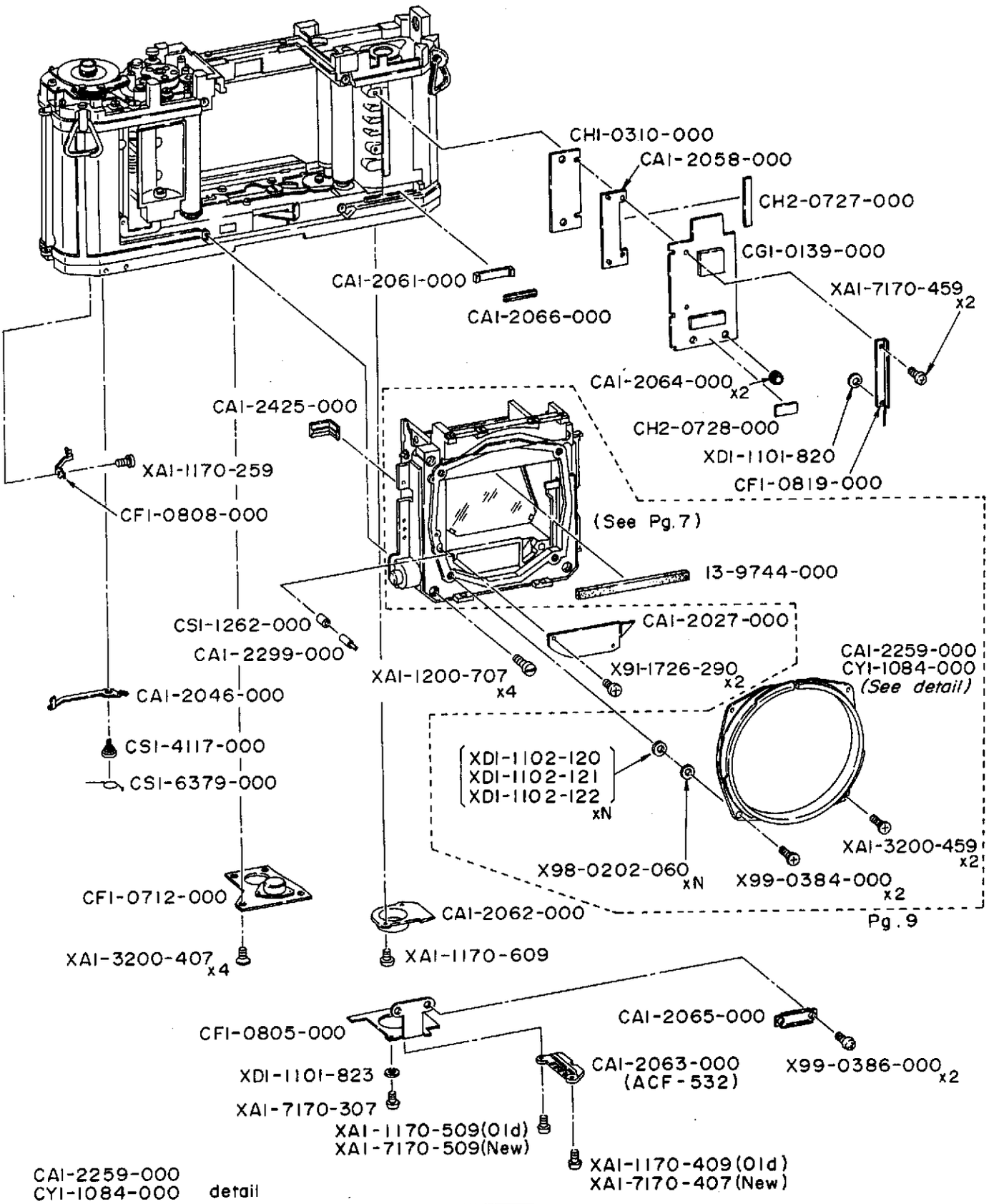
Note: Numbers in parentheses in the text correspond to circled numbers on page 6. Disassemble in normal order and reassemble in reverse order.

# PARTS LIST

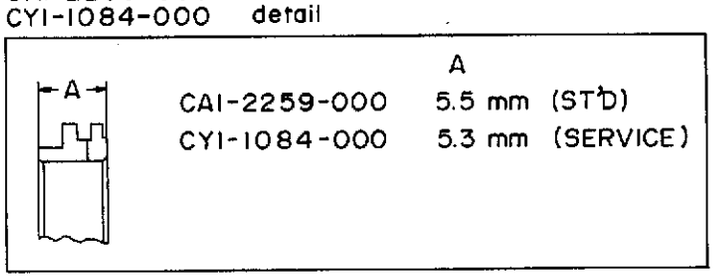
REF.NO.C12-0751

| NEW PARTS NO. | CLASS | QTY | DESCRIPTION |
|---|---|---|---|
| CA1-1944-000 | D | 1 | SCREW, SLOTTED, SHOULDER |
| CA1-2041-000 | E | 1 | ROD, RELEASE |
| CA1-2051-000 | D | 1 | FRAME, INFORMATION INDICATOR |
| CA1-2052-000 | C | 1 | SHEET, DIAPHRAGM INDEX |
| CA1-2053-000 | B | 1 | NEEDLE, FOLLOWING |
| CA1-2057-000 | E | 1 | GUIDE, AVO INDICATOR |
| CA1-2079-000 | D | 1 | TERMINAL, SW4 |
| CA1-2081-000 | D | 1 | NUT |
| CA1-2228-000 | E | 1 | CAM, CLICK |
| CA1-2229-000 | E | 1 | PULLEY |
| CA1-2230-000 | C | 1 | RING, C |
| CA1-2231-000 | E | 1 | BASE, CONTACT |
| CA1-2232-000 | D | 2 | INSULATOR |
| CA1-2233-000 | C | 1 | CONTACT |
| CA1-2234-000 | C | 1 | CONTACT |
| CA1-2437-000(XXX) | D | 1 | WASHER |
| CA1-2481-000 | D | 1 | COLLAR |
| CF1-0710-000 | E | 1 | LEVER, REWIND BUTTON |
| CF1-0714-000 | D | 1 | INDICATOR, AVO |
| CF1-0758-000 | D | 1 | PULLEY, 2ND |
| CF1-0759-000 | D | 1 | PULLEY, 1ST |
| CG1-0143-000 | D | 1 | SELECTOR UNIT, SHUTTER SPEED |
| CH1-0309-000 | C | 1 | BOARD, PRINTED RESISTOR |
| CS1-4118-000 | E | 1 | SCREW |
| CS1-5473-000 | D | 1 | SPRING, COIL |
| CS1-6394-000 | D | 1 | SPRING |
| CS1-6395-000 | D | 1 | SPRING |
| CS1-6396-000 | D | 1 | SPRING |
| X91-1436-700 | | 1 | SCREW |
| X96-1723-040 | | 1 | SCREW |
| X98-0604-040 | | | WASHER |
| XA1-1140-209 | | 2 | SCREW |
| XA1-3140-259 | | 1 | SCREW |
| XA1-3170-407 | | 2 | SCREW |
| XA1-7170-309 | | 1 | SCREW |
| XD1-1101-820 | | | WASHER |
| XD1-1101-821 | | | WASHER |
| XD1-1102-610 | | | WASHER |

# CANON NEW F-1




CAI-2259-000
CYI-1084-000 detail



# PARTS LIST

REF.NO.C12-0751

| NEW PARTS NO. | CLASS | QTY | DESCRIPTION |
|---|---|---|---|
| 13-9744-000 | D | 1 | CUSHION |
| CA1-2027-000 | C | 1 | PLATE, ACCESSORY |
| CA1-2046-000 | E | 1 | LEVER, M.E. SET |
| CA1-2058-000 | E | 1 | PLATE, POSITION SET |
| CA1-2061-000 | E | 1 | CUSHION |
| CA1-2062-000 | E | 1 | HOLDER, REWIND SHAFT |
| CA1-2063-000 | C | 1 | TERMINAL, M.D. |
| CA1-2064-000 | E | 2 | COLLAR |
| CA1-2065-000 | E | 1 | HOLDER |
| CA1-2066-000 | E | 1 | CUSHION |
| CA1-2259-000 | C | 1 | MOUNT, BODY |
| CA1-2299-000 | D | 1 | PIN, AE SIGNAL |
| CA1-2425-000 | E | 1 | SHIELD, LIGHT |
| CF1-0712-000 | D | 1 | SOCKET, TRIPOD |
| CF1-0805-000 | C | 1 | PCB ASS'Y |
| CF1-0808-000 | E | 1 | PIN, RELEASE |
| CF1-0819-000 | E | 1 | HOLDER, CIRCUIT BOARD |
| CG1-0139-000 | C | 1 | PCB ASS'Y |
| CH1-0310-000 | C | 1 | BOARD, PRINTED RESISTOR |
| CH2-0727-000 | C | 1 | CONNECTOR |
| CH2-0728-000 | C | 1 | CONNECTOR |
| CS1-1262-000 | D | 1 | GUIDE, AE SIGNAL PIN |
| CS1-4117-000 | E | 1 | SCREW |
| CS1-6379-000 | E | 1 | SPRING |
| CY1-1084-000 | C | 1 | MOUNT, BODY |
| X91-1726-290 | | 2 | SCREW |
| X98-0202-060 | | | WASHER |
| X99-0384-000 | | 2 | SCREW |
| X99-0386-000 | | 2 | SCREW |
| XA1-1170-259 | | 1 | SCREW |
| XA1-1170-409 | | 1 | SCREW |
| XA1-1170-509 | | 1 | SCREW |
| XA1-1170-609 | | 1 | SCREW |
| XA1-1200-707 | | 4 | SCREW |
| XA1-3200-407 | | 4 | SCREW |
| XA1-3200-459 | | 2 | SCREW |
| XA1-7170-307 | | 1 | SCREW |
| XA1-7170-407 | | 1 | SCREW |
| XA1-7170-459 | | 2 | SCREW |
| XA1-7170-509 | | 1 | SCREW |
| XD1-1101-820 | | 1 | WASHER |
| XD1-1101-823 | | 1 | WASHER |
| XD1-1102-120 | | | WASHER |
| XD1-1102-121 | | | WASHER |
| XD1-1102-122 | | | WASHER |

REF. NO. C12-0751

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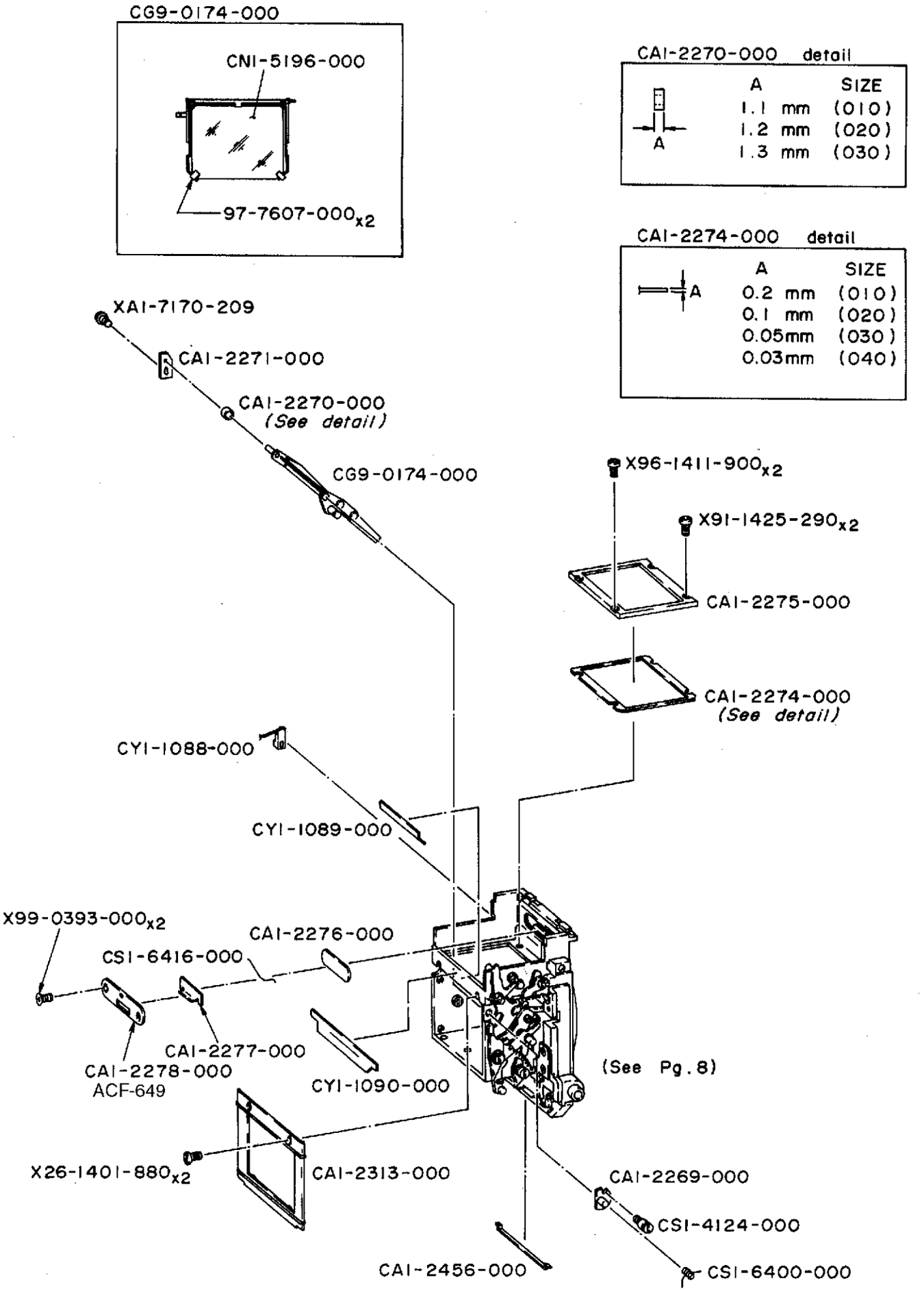


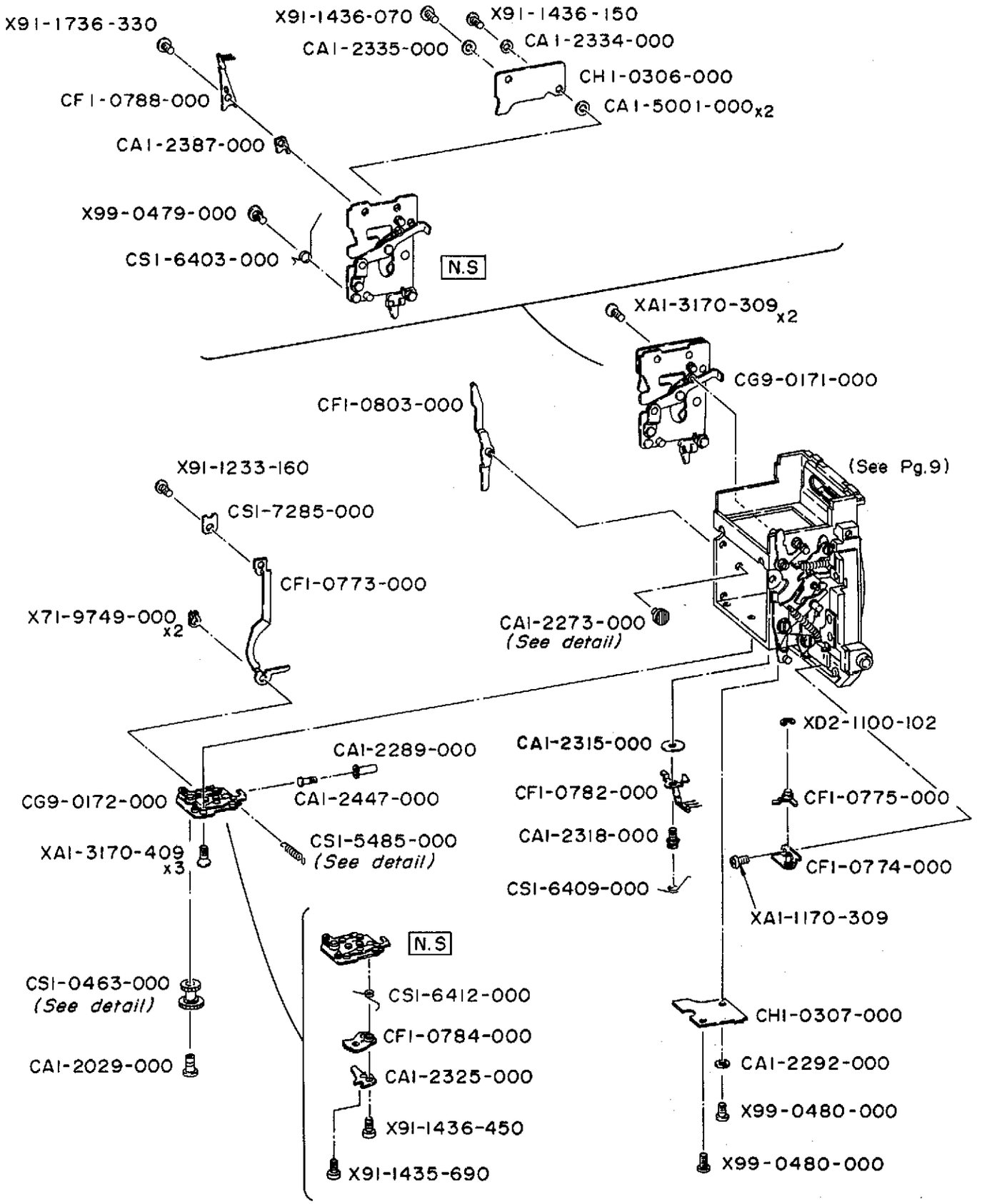
# PARTS LIST

REF.NO.C12-0751

| NEW PARTS NO. | CLASS | QTY | DESCRIPTION |
|---|---|---|---|
| 97-7607-000 | B | 2 | HOLDER, MIRROR |
| CA1-2269-000 | E | 1 | SHAFT, MIRROR |
| CA1-2270-000(XXX) | E | 1 | COLLAR |
| CA1-2271-000 | E | 1 | HOLDER, MIRROR HINGE |
| CA1-2274-000(XXX) | C | 1 | WASHER, ADJUSTING |
| CA1-2275-000 | D | 1 | MASK |
| CA1-2276-000 | E | 1 | PLATE, PROTECTION |
| CA1-2277-000 | D | 1 | HOLDER, FOCUSING SCREEN UNIT |
| CA1-2278-000 | D | 1 | PLATE, ACCESSORY |
| CA1-2313-000 | E | 1 | SHIELD, LIGHT |
| CA1-2456-000 | D | 1 | CUSHION |
| CG9-0174-000 | C | 1 | MIRROR ASS'Y(W/FRAME) |
| CN1-5196-000 | C | 1 | MIRROR |
| CS1-4124-000 | E | 1 | SCREW, SHAFT |
| CS1-6400-000 | D | 1 | SPRING |
| CS1-6416-000 | E | 1 | SPRING |
| CY1-1088-000 | D | 1 | SW-8 ASS'Y |
| CY1-1089-000 | D | 1 | SHIELD, LIGHT |
| CY1-1090-000 | E | 1 | SHIELD, LIGHT |
| X26-1401-880 | | 2 | SCREW |
| X91-1425-290 | | 2 | SCREW |
| X96-1411-900 | | 2 | SCREW |
| X99-0393-000 | | 2 | SCREW |
| XA1-7170-209 | | 1 | SCREW |

REF. NO. C12-0751

# CANON NEW F-1




CA1-2273-000 detail

| A | SIZE |
|---|---|
| φ4.6 mm | (010) |
| φ5.0 mm | (020) |
| φ5.4 mm | (030) |
| φ6.0 mm | (040) |

CS1-0463-000 detail

| A | SIZE |
|---|---|
| φ9.00 mm | (010) |
| φ8.82 mm | (030) |

CS1-5485-000 detail

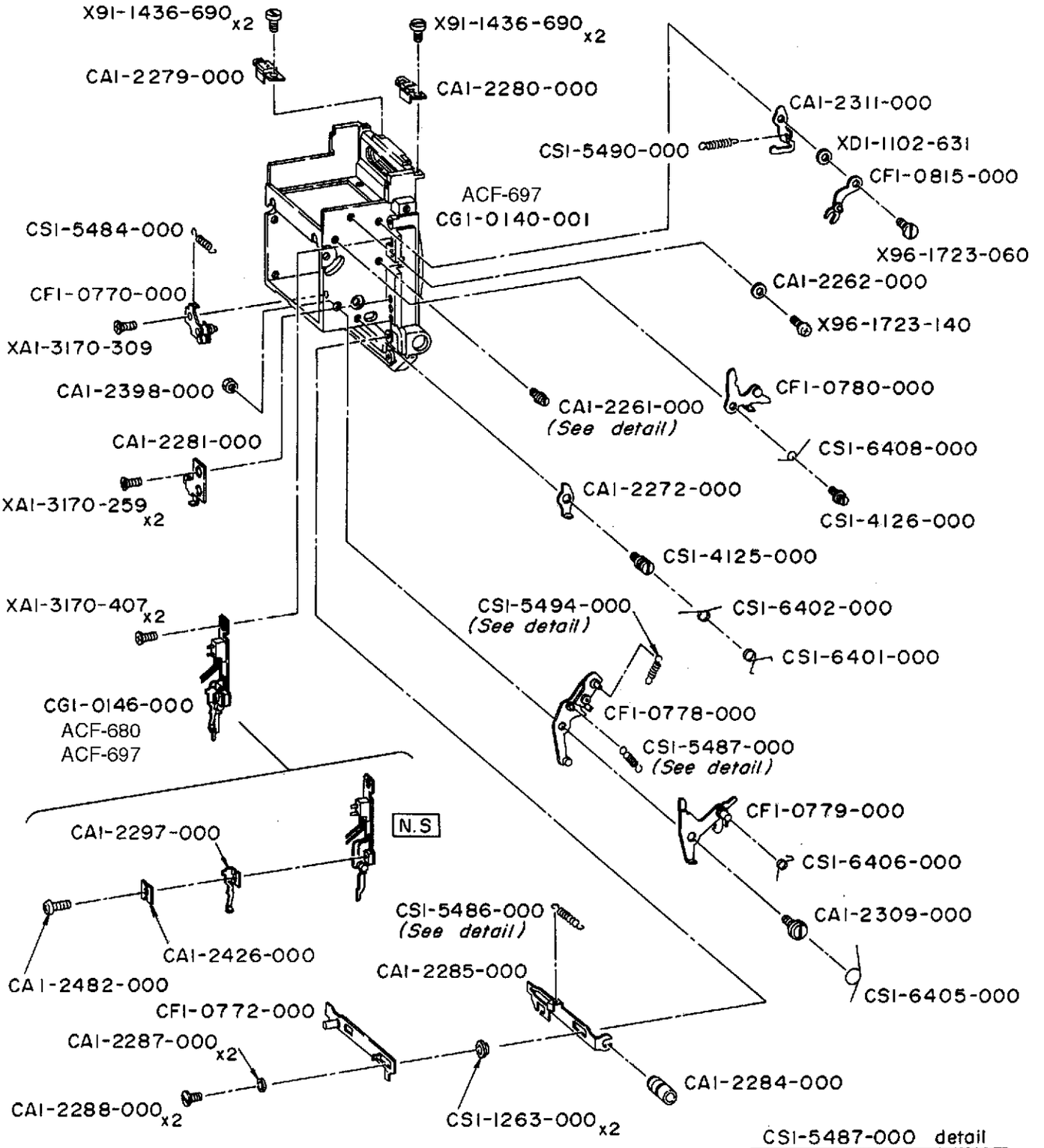
| Strength | SIZE |
|---|---|
| 40 g | (010) |
| 50 g | (020) |
| 70 g | (030) |

# PARTS LIST

REF.NO.C12-0751

| NEW PARTS NO. | CLASS | QTY | DESCRIPTION |
|---|---|---|---|
| CA1-2029-000 | E | 1 | STUD |
| CA1-2273-000(XXX) | E | 1 | CUSHION |
| CA1-2289-000 | D | 1 | PIN, MAX.APERTURE CORRECTION |
| CA1-2292-000 | D | 1 | INSULATOR |
| CA1-2315-000 | E | 1 | WASHER |
| CA1-2318-000 | E | 1 | SHAFT, CORRECTION LEVER |
| CA1-2325-000 | D | 1 | LEVER, COUPLING ADJ. |
| CA1-2334-000 | E | 1 | WASHER, SPRING |
| CA1-2335-000 | D | 1 | INSULATOR |
| CA1-2387-000 | D | 1 | WASHER |
| CA1-2447-000 | D | 1 | SCREW, MAX.APERTURE CORRECT. |
| CA1-5001-000 | E | 2 | INSULATOR |
| CF1-0773-000 | E | 1 | HOLDER, FOLLOWING NEEDLE |
| CF1-0774-000 | E | 1 | BRACKET, INTERMEDIATE |
| CF1-0775-000 | E | 1 | LEVER, INTERMEDIATE |
| CF1-0782-000 | C | 1 | WIPER |
| CF1-0784-000 | D | 1 | GEAR, SECTOR |
| CF1-0788-000 | C | 1 | WIPER |
| CF1-0803-000 | E | 1 | LEVER, CORRECTION |
| CG9-0171-000 | D | 1 | AE UNIT |
| CG9-0172-000 | D | 1 | MAX.APERTURE CORRECTION UNIT |
| CH1-0306-000 | C | 1 | BOARD, PRINTED RESISTOR |
| CH1-0307-000 | C | 1 | BOARD, PRINTED RESISTOR |
| CS1-0463-000(XXX) | E | 1 | GEAR, AE COUPLING |
| CS1-5485-000(XXX) | D | 1 | SPRING, COIL |
| CS1-6403-000 | C | 1 | SPRING |
| CS1-6409-000 | D | 1 | SPRING |
| CS1-6412-000 | D | 1 | SPRING |
| CS1-7285-000 | D | 1 | SPRING, PLATE |
| X71-9749-000 | | 2 | RETAINER |
| X91-1233-160 | | 1 | SCREW |
| X91-1435-690 | | 1 | SCREW |
| X91-1436-070 | | 1 | SCREW |
| X91-1436-150 | | 1 | SCREW |
| X91-1436-450 | | 1 | SCREW |
| X91-1736-330 | | 1 | SCREW |
| X99-0479-000 | | 1 | SCREW |
| X99-0480-000 | | 2 | SCREW |
| XA1-1170-309 | | 1 | SCREW |
| XA1-3170-309 | | 2 | SCREW |
| XA1-3170-409 | | 3 | SCREW |
| XD2-1100-102 | | 1 | E RING |

# CANON NEW F-1




CSI-5487-000 detail

| STRENGTH | SIZE |
|---|---|
| 690g | (010) |
| 630g | (020) |
| 610g | (030) |

CAI-2261-000 detail

| A | SIZE |
|---|---|
| Φ2.6 mm | (010) |
| Φ3.0 mm | (020) |
| Φ3.4 mm | (030) |

CSI-5486-000 detail

| STRENGTH | SIZE |
|---|---|
| 950g | (010) |
| 870g | (020) |
| 720g | (030) |
| 670g | (040) |

CSI-5494-000 detail

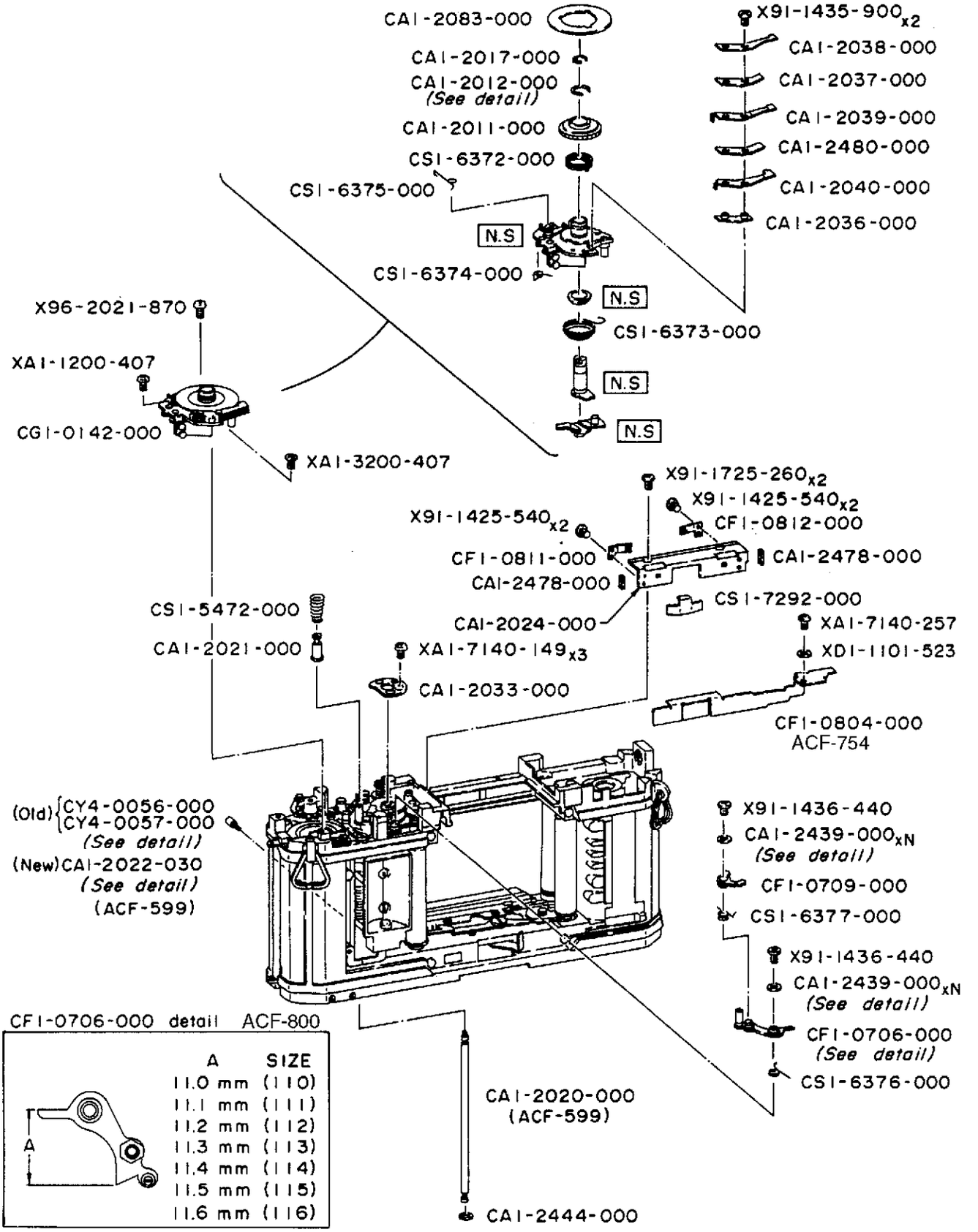
| STRENGTH | SIZE |
|---|---|
| 150g | (010) |
| 175g | (020) |
| 200g | (030) |

# PARTS LIST

REF.NO.C12-0751

| NEW PARTS NO. | CLASS | QTY | DESCRIPTION |
|---|---|---|---|
| CA1-2261-000(XXX) | D | 1 | STOPPER |
| CA1-2262-000 | E | 1 | COLLAR |
| CA1-2272-000 | E | 1 | LEVER, MIRROR RETURN |
| CA1-2279-000 | D | 1 | CONTACT, FINDER(RIGHT) |
| CA1-2280-000 | D | 1 | CONTACT, FINDER(LEFT) |
| CA1-2281-000 | E | 1 | HOLDER, SPRING |
| CA1-2284-000 | C | 1 | BUTTON, STOP DOWN MEASURING |
| CA1-2285-000 | E | 1 | SLIDE, DIAPHRAGM CLOSING |
| CA1-2287-000 | D | 2 | COLLAR |
| CA1-2288-000 | E | 2 | SCREW |
| CA1-2297-000 | C | 1 | CONTACT |
| CA1-2309-000 | E | 1 | SCREW, SHAFT |
| CA1-2311-000 | E | 1 | LATCH, MIRROR START |
| CA1-2398-000 | E | 1 | NUT |
| CA1-2426-000 | D | 1 | INSULATOR |
| CA1-2482-000 | E | 1 | SCREW |
| CF1-0770-000 | E | 1 | BASE, STOP DOWN LOCK |
| CF1-0772-000 | E | 1 | SLIDE, A MODE(FOLLOW NEEDLE) |
| CF1-0778-000 | E | 1 | LEVER, MIRROR CHARGE |
| CF1-0779-000 | E | 1 | LEVER, MIRROR DRIVE |
| CF1-0780-000 | E | 1 | LEVER, 1ST CURTAIN START |
| CF1-0815-000 | E | 1 | LEVER, 1ST CURTAIN RELEASE |
| CG1-0140-001 | E | 1 | PANEL, FRONT |
| CG1-0146-000 | D | 1 | MODE ASS'Y, A |
| CS1-1263-000 | E | 2 | COLLAR |
| CS1-4125-000 | E | 1 | SCREW |
| CS1-4126-000 | E | 1 | SCREW |
| CS1-5484-000 | D | 1 | SPRING, COIL |
| CS1-5486-000(XXX) | E | 1 | SPRING, COIL |
| CS1-5487-000(XXX) | D | 1 | SPRING, COIL |
| CS1-5490-000 | D | 1 | SPRING, COIL |
| CS1-5494-000(XXX) | D | 1 | SPRING, COIL |
| CS1-6401-000 | D | 1 | SPRING |
| CS1-6402-000 | D | 1 | SPRING |
| CS1-6405-000 | D | 1 | SPRING |
| CS1-6408-000 | D | 1 | SPRING |
| X91-1436-690 | | 4 | SCREW |
| X96-1723-060 | | 1 | SCREW |
| X96-1723-140 | | 1 | SCREW |
| XA1-3170-259 | | 2 | SCREW |
| XA1-3170-309 | | 1 | SCREW |
| XA1-3170-407 | | 2 | SCREW |
| XD1-1102-631 | | 1 | WASHER |

# CANON NEW F-1




CF1-0706-000 detail ACF-800

| A | SIZE |
|---|---|
| 11.0 mm | (110) |
| 11.1 mm | (111) |
| 11.2 mm | (112) |
| 11.3 mm | (113) |
| 11.4 mm | (114) |
| 11.5 mm | (115) |
| 11.6 mm | (116) |

CA1-2012-000 detail

| A | SIZE |
|---|---|
| 0.15 mm | (015) |
| 0.18 mm | (018) |
| 0.23 mm | (023) |
| 0.28 mm | (028) |

CA1-2022-030 (New)
CY4-0056-000 } (Old)
CY4-0057-000 } (Old)
detail

| A | (New) | (Old) |
|---|---|---|
| ø1.76 mm | (176) | CY4-0056-000 |
| ø1.78 mm | (178) | CY4-0057-000 |

CA1-2439-000 detail

| A | SIZE |
|---|---|
| 0.03 mm | (003) |
| 0.05 mm | (005) |
| 0.10 mm | (010) |

**Disassembly Notes**

13. If the SV board is to be removed, remove the white cord from the P.C. Terminal.

    If the SV board is not going to be removed, lift the front panel and unsolder to white cord from the front panel (SW16') end.

14. Remove the plastic foam light shields from the battery box area.

15. If the moisture seal rubber around the main circuit board is damaged, replace it.

**Assembly and Adjustment Notes**

2.4 In the order shown in figure 2, set the levers as shown in figure 3.

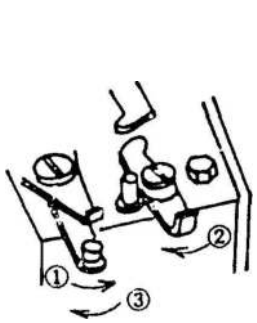



Fig. 2

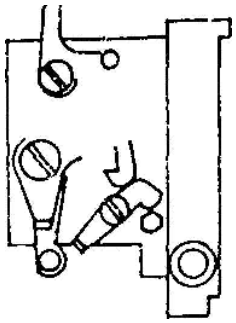


Fig. 3

3.1. With the levers positioned as in figure 3, install so they are between the mirror charge and signal levers (Fig. 1. page 6).

Caution: If this operation is not done correctly, winding timing will be incorrect and the shutter will not cock.

3.2. While performing the above step, it is possible that the signal lever will get pushed out of position. Check that the levers are positioned as shown below. (Another method is to hold the intermediate signal lever toward the mount side while installing the unit.)

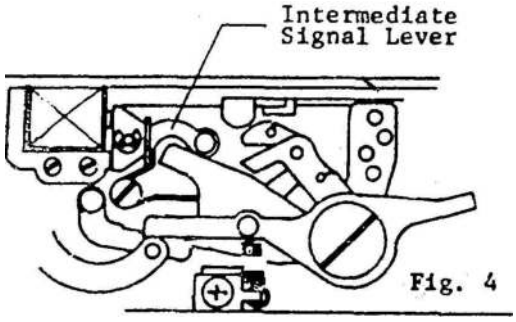



Fig. 4

3.3. While holding the body 1st curtain latch lever out of the way, position the 1st curtain start lever toward the rear.

3.4. Put Arontite R on the threads of the mirror striker lever screw before installing it.

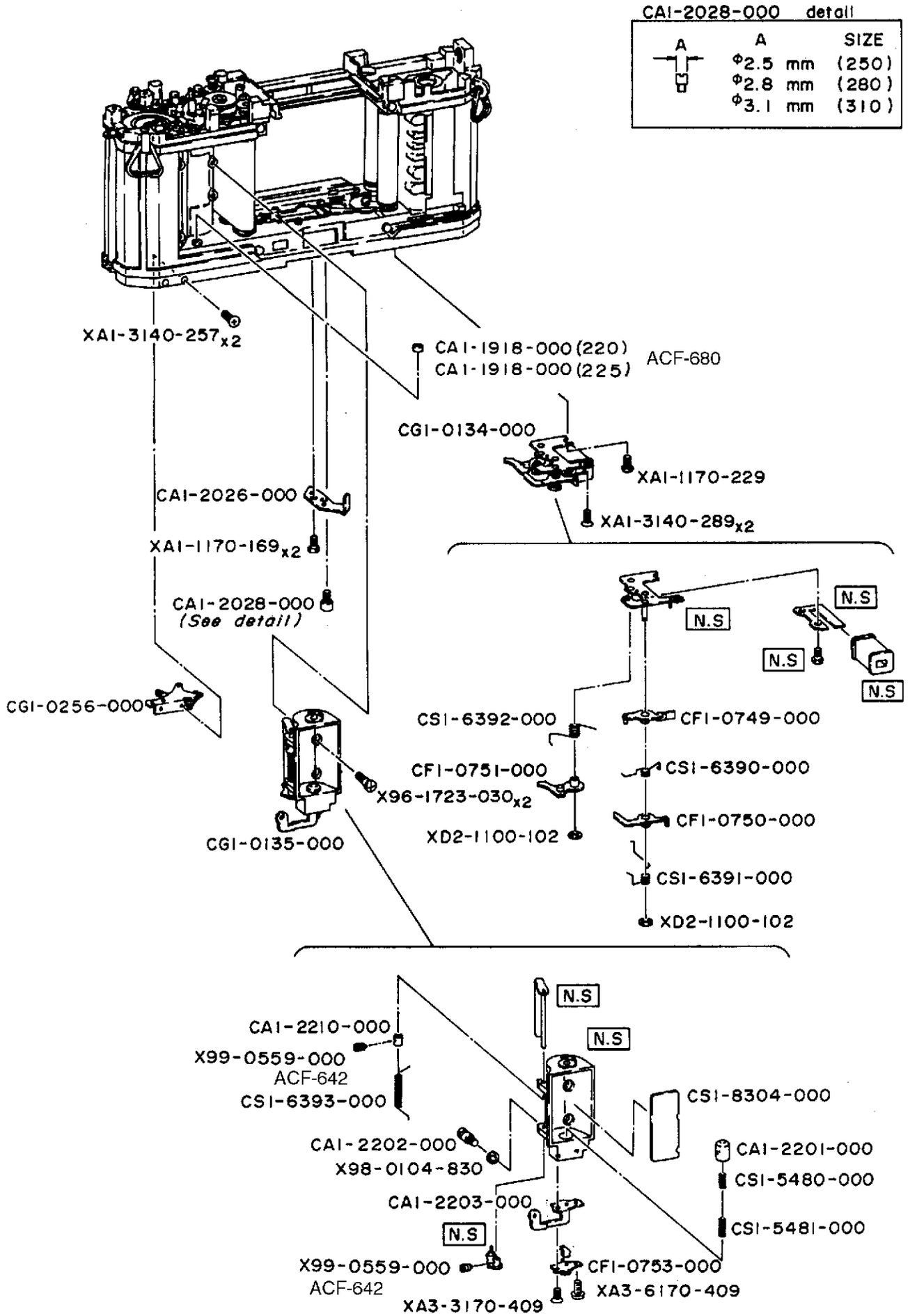
Note: Numbers in parentheses in the text correspond to circled numbers on page 6.

# PARTS LIST

REF.NO.C12-0751

| NEW PARTS NO. | CLASS | QTY | DESCRIPTION |
|---|---|---|---|
| CA1-2011-000 | D | 1 | GEAR, COUNTER |
| CA1-2012-000(XXX) | C | 1 | RING, C |
| CA1-2017-000 | C | 1 | RING, C |
| CA1-2020-000 | D | 1 | SHAFT, SPROCKET |
| CA1-2021-000 | E | 1 | STUD |
| CA1-2022-030(XXX) | D | 1 | SCREW, SPROCKET |
| CA1-2024-000 | E | 1 | CASE, CLICK |
| CA1-2033-000 | D | 1 | CAM, RELEASE |
| CA1-2036-000 | E | 1 | BASE, CONTACT |
| CA1-2037-000 | D | 1 | INSULATOR |
| CA1-2038-000 | C | 1 | CONTACT, RELEASE |
| CA1-2039-000(XXX) | D | 1 | CONTACT, RELEASE-2 |
| CA1-2040-000 | D | 1 | CONTACT, RELEASE-3 |
| CA1-2083-000 | C | 1 | DIAL, FILM COUNTER |
| CA1-2439-000(XXX) | D | 1 | WASHER |
| CA1-2444-000 | C | 1 | LEATHER |
| CA1-2478-000 | D | 2 | SHIELD, LIGHT |
| CA1-2480-000 | D | 1 | INSULATOR |
| CF1-0706-000(XXX) | D | 1 | LEVER, 2ND CURTAIN RELEASE |
| CF1-0709-000 | E | 1 | LEVER, 2ND CURTAIN RELEASE |
| CF1-0804-000 | C | 1 | PCB ASS'Y |
| CF1-0811-000 | D | 1 | PLATE, CLICK |
| CF1-0812-000 | D | 1 | PLATE, CLICK |
| CG1-0142-000 | D | 1 | WINDING UNIT |
| CS1-5472-000 | E | 1 | SPRING, COIL |
| CS1-6372-000 | D | 1 | SPRING |
| CS1-6373-000 | E | 1 | SPRING |
| CS1-6374-000 | D | 1 | SPRING |
| CS1-6375-000 | D | 1 | SPRING |
| CS1-6376-000 | D | 1 | SPRING |
| CS1-6377-000 | E | 1 | SPRING |
| CS1-7292-000 | E | 1 | SPRING, PLATE |
| CY4-0056-000 | D | 1 | SCREW |
| CY4-0057-000 | D | 1 | SCREW |
| X91-1425-540 | | 4 | SCREW |
| X91-1435-900 | | 2 | SCREW |
| X91-1436-440 | | 2 | SCREW |
| X91-1725-260 | | 2 | SCREW |
| X96-2021-870 | | 1 | SCREW |
| XA1-1200-407 | | 1 | SCREW |
| XA1-3170-407 | | 1 | SCREW |
| XA1-7140-149 | | 3 | SCREW |
| XA1-7140-257 | | 1 | SCREW |
| XD1-1101-523 | | 1 | WASHER |

# CANON NEW F-1

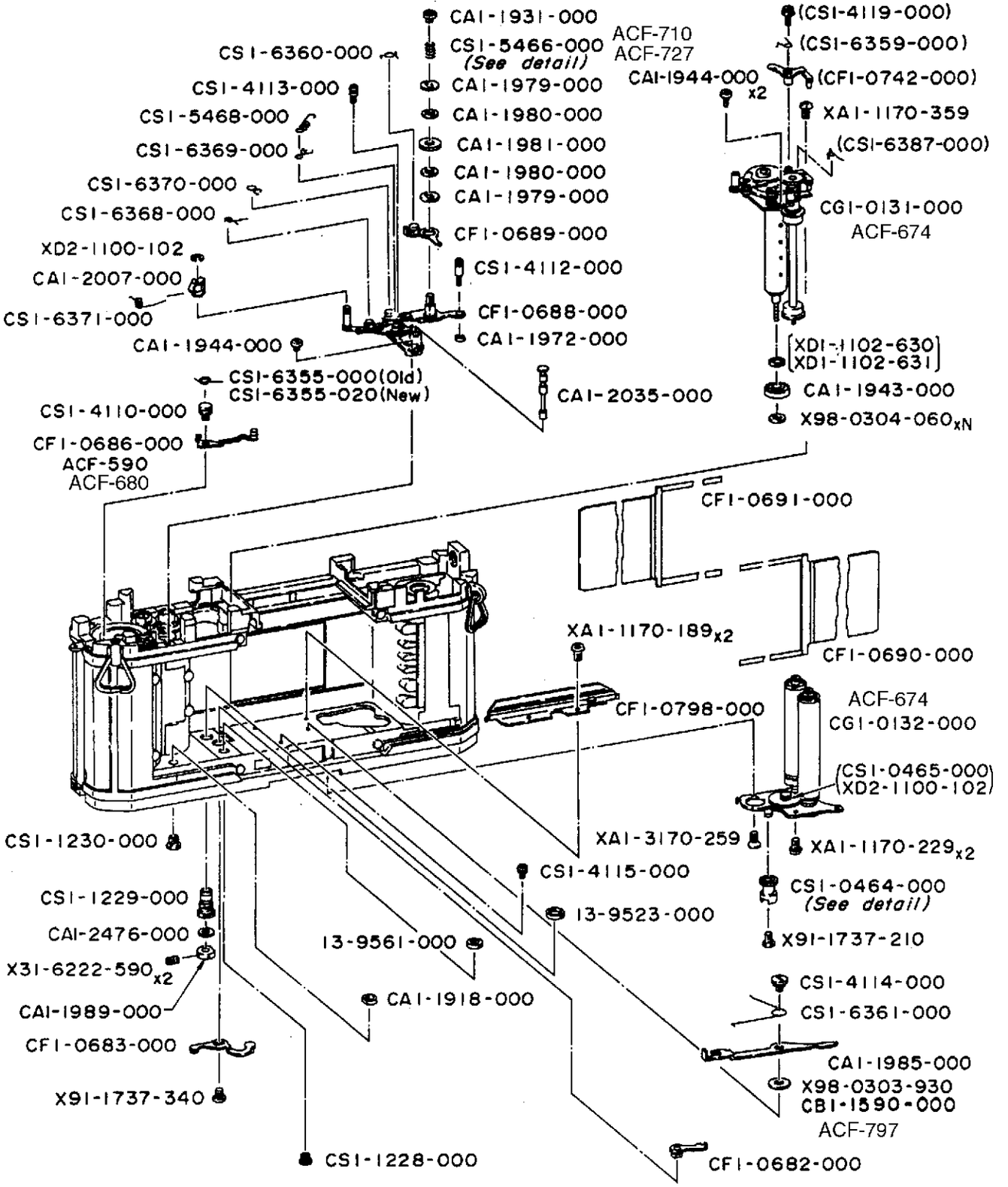

CAI-2028-000 detail
A
A SIZE
Φ2.5 mm (250)
Φ2.8 mm (280)
Φ3.1 mm (310)
XAI-3140-257x2
CAI-1918-000(220)
CAI-1918-000(225)
ACF-680
CGI-0134-000
XAI-1170-229
XAI-3140-289x2
CAI-2026-000
XAI-1170-169x2
CAI-2028-000
(See detail)
CGI-0256-000
CGI-0135-000
N.S
CSI-6392-000
CFI-0749-000
CFI-0751-000
X96-1723-030x2
CSI-6390-000
XD2-1100-102
CFI-0750-000
CSI-6391-000
XD2-1100-102
CAI-2210-000
X99-0559-000
ACF-642
CSI-6393-000
CSI-8304-000
CAI-2202-000
X98-0104-830
CAI-2201-000
CSI-5480-000
CAI-2203-000
CSI-5481-000
X99-0559-000
ACF-642
CFI-0753-000
XA3-6170-409
XA3-3170-409

# PARTS LIST

REF.NO.C12-0751

| NEW PARTS NO. | CLASS | QTY | DESCRIPTION |
|---|---|---|---|
| CA1-1918-000(220) | E | 1 | NUT, ADJUSTING |
| CA1-1918-000(225) | E | 1 | NUT, ADJUSTING |
| CA1-2026-000 | E | 1 | LEVER, DIAPHRAGM RELEASE |
| CA1-2028-000(XXX) | E | 1 | SCREW |
| CA1-2201-000 | C | 1 | CONTACT, BATTERY(-) |
| CA1-2202-000 | E | 1 | SCREW |
| CA1-2203-000 | D | 1 | CONTACT, EARTH |
| CA1-2210-000 | E | 1 | COLLAR, STOPPER |
| CF1-0749-000 | D | 1 | ARMATURE |
| CF1-0750-000 | E | 1 | LEVER, ARMATURE RELEASE |
| CF1-0751-000 | E | 1 | LEVER, MAGNET RELEASE |
| CF1-0753-000 | E | 1 | BASE, CONTACT(-) |
| CG1-0134-000 | D | 1 | MAGNET-2 UNIT |
| CG1-0135-000 | D | 1 | CHAMBER UNIT, BATTERY |
| CG1-0256-000 | E | 1 | SW5 ASS'Y |
| CS1-5480-000 | C | 1 | CONTACT, SPRING |
| CS1-5481-000 | C | 1 | CONTACT, SPRING |
| CS1-6390-000 | D | 1 | SPRING |
| CS1-6391-000 | D | 1 | SPRING |
| CS1-6392-000 | D | 1 | SPRING |
| CS1-6393-000 | D | 1 | SPRING |
| CS1-8304-000 | C | 1 | SEAL, BATTERY |
| X96-1723-030 | | 1 | SCREW |
| X98-0104-830 | | 1 | WASHER |
| X99-0559-000 | | 2 | SCREW, SET |
| XA1-1170-229 | | 1 | SCREW |
| XA1-3140-257 | | 2 | SCREW |
| XA1-3140-289 | | 2 | SCREW |
| XA11170-169 | | 2 | SCREW |
| XA3-3170-409 | | 1 | SCREW |
| XA3-6170-409 | | 1 | SCREW |
| XD2-1100-102 | | 2 | SCREW |

# CANON NEW F-1




CS1-0464-000 detail

| A | SIZE |
|---|---|
| ø6.42 mm | (642) |
| ø6.60 mm | (660) |
| ø6.78 mm | (678) |

ACF-710 ACF-727

CS1-5466-000 detail

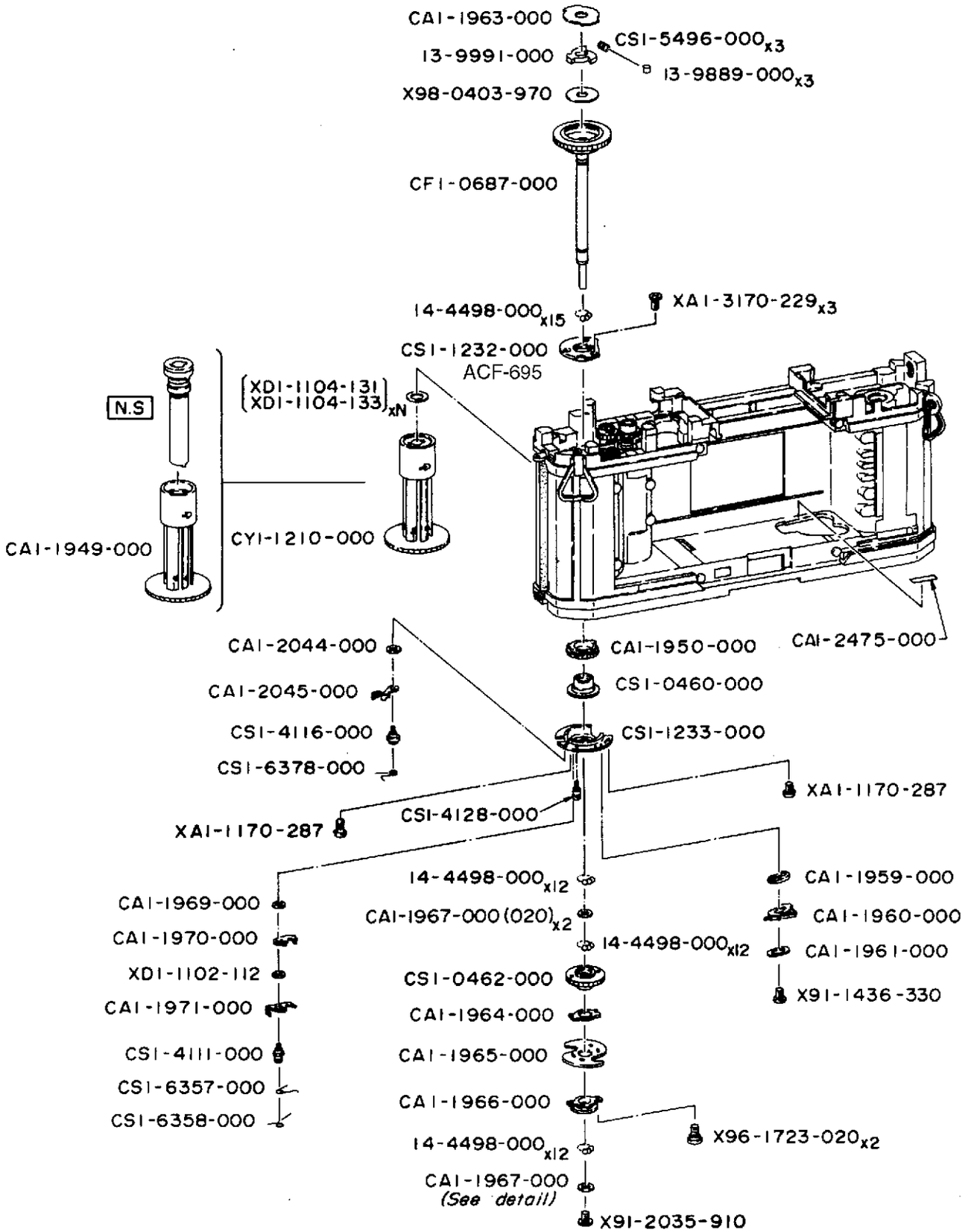
| A | SIZE |
|---|---|
| ø0.60 mm | (060) |
| ø0.65 mm | (065) |
| ø0.70 mm | (070) |
| ø0.75 mm | (075) |

# PARTS LIST

REF.NO.C12-0751

| NEW PARTS NO. | CLASS | QTY | DESCRIPTION |
|---|---|---|---|
| 13-9523-000 | E | 1 | NUT |
| 13-9561-000 | E | 1 | NUT |
| CA1-1918-000 | D | 1 | NUT |
| CA1-1931-000 | E | 1 | NUT, BRAKE |
| CA1-1943-000 | E | 1 | COLLAR |
| CA1-1944-000 | D | 3 | SCREW |
| CA1-1972-000 | E | 1 | COLLAR |
| CA1-1979-000 | E | 2 | WASHER |
| CA1-1980-000 | C | 2 | LEATHER, 2ND CURTAIN BRAKE |
| CA1-1981-000 | D | 1 | DISK, 2ND CURTAIN BRAKE |
| CA1-1985-000 | E | 1 | LEVER, SIGNAL |
| CA1-1989-000 | E | 1 | CAM, 2ND CURTAIN LATCH |
| CA1-2007-000 | D | 1 | CLAW, COUNTER FEEDING |
| CA1-2035-000 | D | 1 | SHAFT, SHUTTER RELEASE |
| CA1-2476-000 | E | 1 | WASHER |
| CB1-1590-000 | | 1 | WASHER |
| CF1-0682-000 | E | 1 | LEVER, MIRROR CHARGE |
| CF1-0683-000 | E | 1 | LEVER, SIGNAL |
| CF1-0686-000 | E | 1 | LEVER, SWITCH |
| CF1-0688-000 | E | 1 | BASE, BRAKE |
| CF1-0689-000 | D | 1 | BRAKE, 2ND CURTAIN |
| CF1-0690-000 | C | 1 | CURTAIN, 1ST |
| CF1-0691-000 | C | 1 | CURTAIN, 2ND |
| CF1-0742-000 | E | 1 | LEVER, 1ST CURTAIN RELEASE |
| CF1-0789-000 | D | 1 | SHIELD, LIGHT |
| CG1-0131-000 | D | 1 | GEAR UNIT, MASTER |
| CG1-0132-000 | D | 1 | DRUM UNIT, SPRING |
| CG1-0464-000(XXX) | D | 1 | GEAR, AE COUPLER |
| CS1-0465-000 | E | 1 | IDLER |
| CS1-1228-000 | E | 1 | BUSH |
| CS1-1229-000 | E | 1 | BUSH |
| CS1-1230-000 | E | 1 | BUSH |
| CS1-4110-000 | E | 1 | SCREW |
| CS1-4112-000 | E | 1 | STUD |
| CS1-4113-000 | E | 1 | STUD |
| CS1-4114-000 | E | 1 | SCREW |
| CS1-4115-000 | E | 1 | STUD |
| CS1-4119-000 | E | 1 | SPRING |
| CS1-5466-000(XXX) | E | 1 | SPRING, COIL |
| CS1-5468-000 | D | 1 | SPRING, COIL |
| CS1-6355-000 | E | 1 | SPRING |
| CS1-6355-020 | E | 1 | SPRING |
| CS1-6359-000 | D | 1 | SPRING |
| CS1-6360-000 | E | 1 | SPRING |
| CS1-6361-000 | E | 1 | SPRING |
| CS1-6368-000 | E | 1 | SPRING |
| CS1-6369-000 | E | 1 | SPRING |
| CS1-6370-000 | E | 1 | SPRING |
| CS1-6371-000 | E | 1 | SPRING |
| CS1-6387-000 | E | 1 | SPRING |
| X31-6222-590 | E | 2 | SCREW |
| X91-1737-210 | E | 1 | SCREW |
| X91-1737-340 | E | 1 | SCREW |
| X98-0303-930 | E | 1 | WASHER |
| X98-0304-060 | E | 1 | WASHER |
| XA1-1170-189 | E | 2 | SCREW |
| XA1-1170-229 | E | 2 | SCREW |
| XA1-1170-359 | E | 1 | SCREW |
| XA1-3170-259 | E | 1 | SCREW |
| XD1-1102-630 | E | 1 | WASHER |
| XD1-1102-631 | E | 1 | WASHER |
| XD2-1100-102 | E | 2 | RING, E |

# CANON NEW F-1




CA1-1967-000 detail

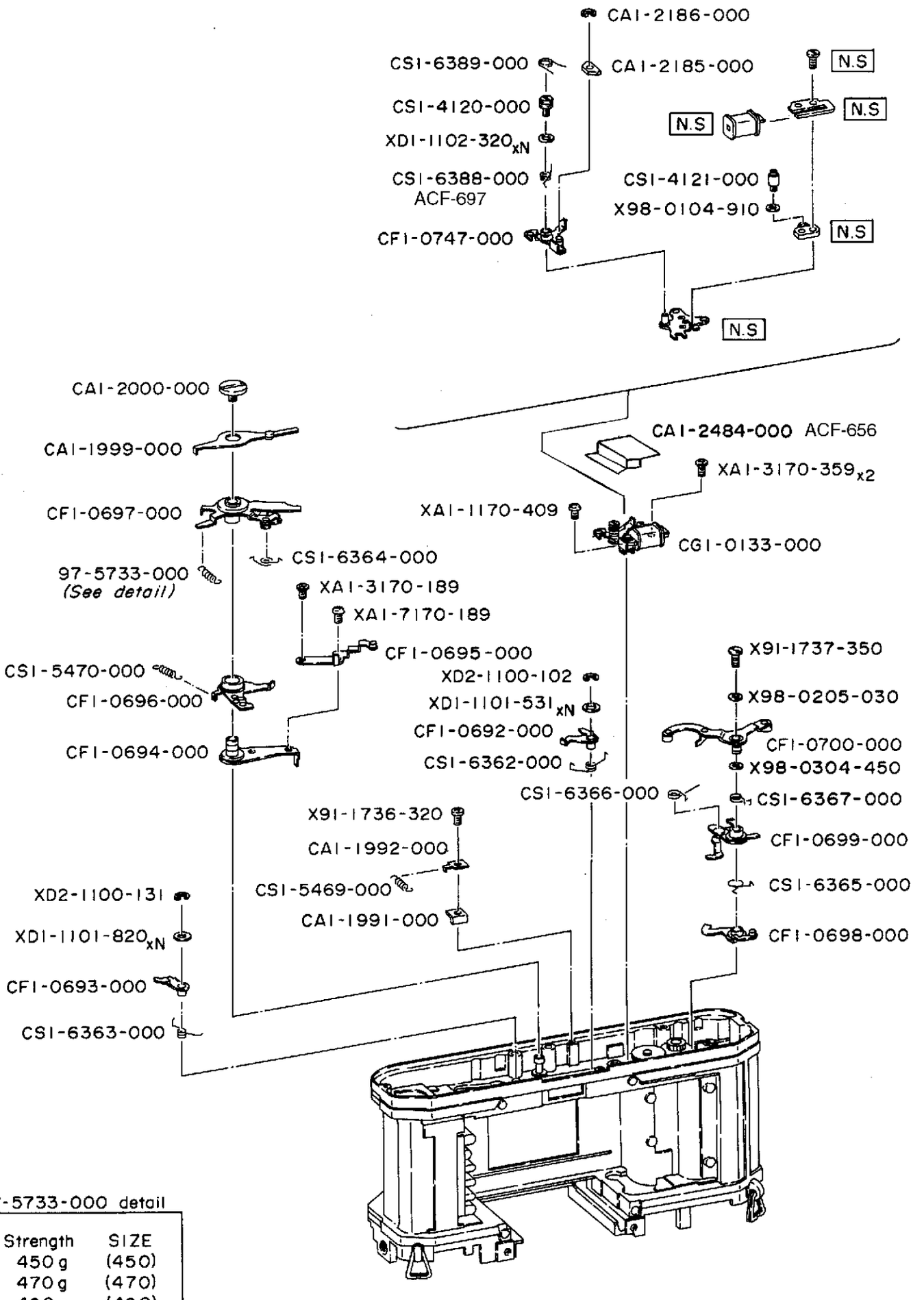
| | A | SIZE |
|---|---|---|
| A | 0.05 mm | (005) |
| | 0.10 mm | (010) |
| | 0.20 mm | (020) |

# PARTS LIST

REF.NO.C12-0751

| NEW PARTS NO. | CLASS | QTY | DESCRIPTION |
|---|---|---|---|
| 13-9889-000 | E | 3 | ROLLER |
| 13-9991-000 | D | 1 | CAM, CLUTCH |
| 14-4498-000 | C | 51 | BALL, STEEL |
| CA1-1949-000 | D | 1 | SPOOL |
| CA1-1950-000 | D | 1 | RATCHET, MULTI-EXPOSURE |
| CA1-1959-000 | E | 1 | BASE, CONTACT |
| CA1-1960-000 | D | 1 | CONTACT |
| CA1-1961-000 | E | 1 | INSULATOR |
| CA1-1963-000 | E | 1 | PLATE, CLUTCH HOLD |
| CA1-1964-000 | E | 1 | SPACER, WINDING CAM |
| CA1-1965-000 | D | 1 | CAM, WIINDING |
| CA1-1966-000 | D | 1 | COUPLER, WINDING |
| CA1-1967-000(XXX) | D | 2 | WASHER |
| CA1-1969-000 | E | 1 | SPACER |
| CA1-1970-000 | E | 1 | CAM, LOWER REVERSE LOCK |
| CA1-1971-000 | E | 1 | CAM, UPPER REVERSE LOCK |
| CA1-2044-000 | E | 1 | SPACER |
| CA1-2045-000 | E | 1 | LEVER, M.E. LATCHET |
| CA1-2475-000 | D | 1 | SHIELD, LIGHT |
| CF1-0687-000 | D | 1 | SHAFT/GEAR, WINDING |
| CS1-0460-000 | E | 1 | GEAR, SPOOL |
| CS1-0462-000 | D | 1 | GEAR, WINDING COUPLER |
| CS1-1232-000 | E | 1 | BUSHING |
| CS1-1233-000 | E | 1 | HOLDER, WINDING GEAR |
| CS1-4111-000 | E | 1 | STUD |
| CS1-4116-000 | E | 1 | SCREW |
| CS1-4128-000 | E | 1 | STUD |
| CS1-5496-000 | B | 3 | COIL, SPRING |
| CS1-6357-000 | E | 1 | SPRING |
| CS1-6358-000 | E | 1 | SPRING |
| CS1-6378-000 | E | 1 | SPRING |
| CY1-1210-000 | C | 1 | SPOOL, ASS'Y |
| X91-1436-330 | | 1 | SCREW |
| X91-2035-910 | | 1 | SCREW |
| X96-1723-020 | | 2 | SCREW |
| X98-0403-970 | | 1 | WASHER |
| XA1-1170-287 | | 2 | SCREW |
| XA1-3170-229 | | 3 | SCREW |
| XD1-1102-112 | | 1 | WASHER |
| XD1-1104-131 | | 1 | WASHER |
| XD1-1104-133 | | 1 | WASHER |

# CANON NEW F-1




97-5733-000 detail

| Strength | SIZE |
|---|---|
| 450 g | (450) |
| 470 g | (470) |
| 490 g | (490) |

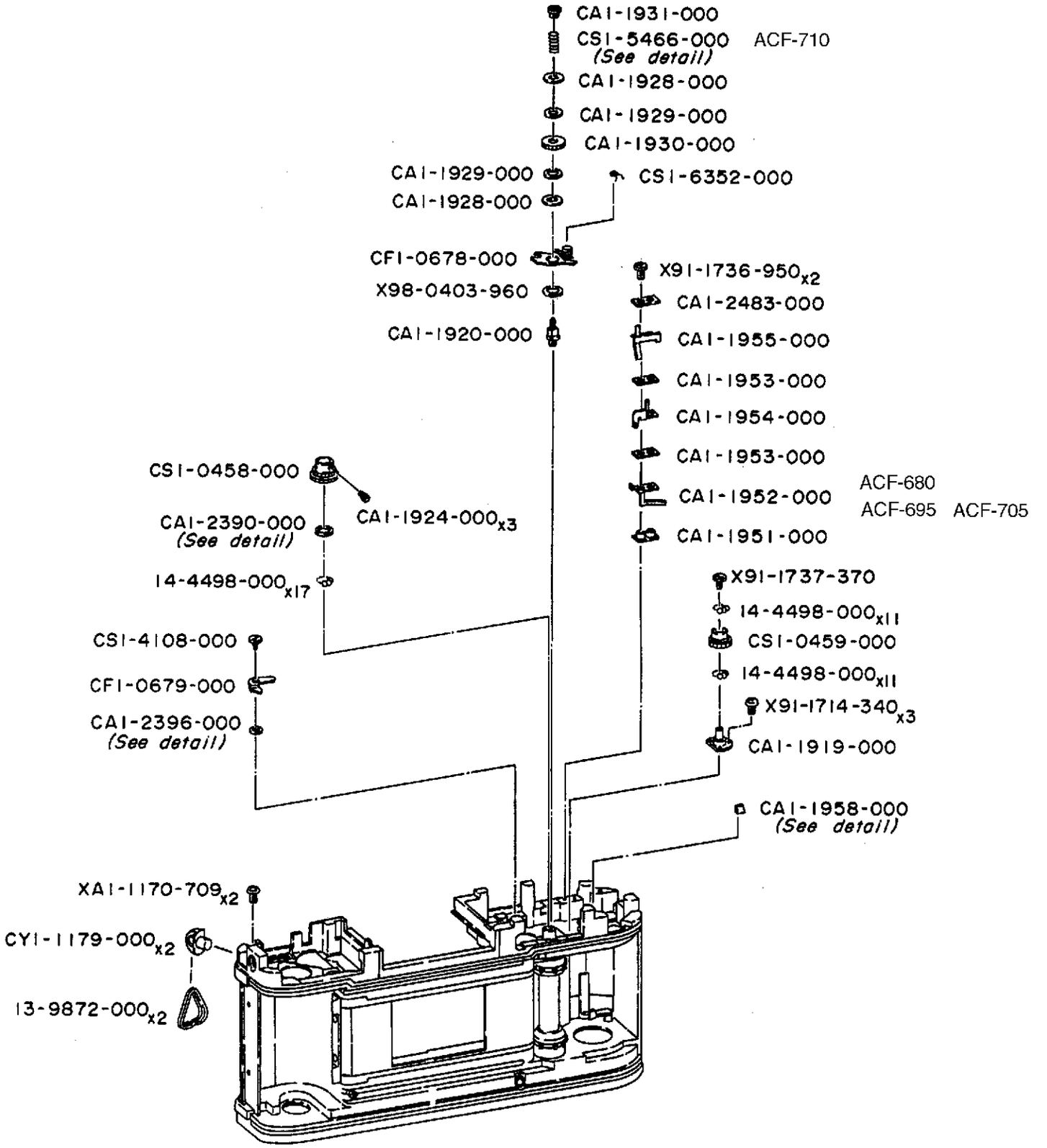
# PARTS LIST

REF.NO.C12-0751

| NEW PARTS NO. | CLASS | QTY | DESCRIPTION |
|---|---|---|---|
| 97-5733-000(XXX) | E | 1 | SPRING, COIL |
| CA1-1991-000 | E | 1 | CUSHION |
| CA1-1992-000 | E | 1 | HOLDER, CUSHION |
| CA1-1999-000 | E | 1 | LEVER, MAGNET CHARGE |
| CA1-2000-000 | E | 1 | SCREW |
| CA1-2185-000 | C | 1 | ARMATURE |
| CA1-2186-000 | C | 1 | E RING |
| CA1-2484-000 | E | 1 | COVER, DUST |
| CF1-0692-000 | E | 1 | LEVER, MIRROR RELEASE |
| CF1-0693-000 | E | 1 | LEVER, DIAPHRAGM RELEASE |
| CF1-0694-000 | E | 1 | LEVER, MIRROR CHARGE |
| CF1-0695-000 | E | 1 | LEVER, CHARGE |
| CF1-0696-000 | E | 1 | LEVER, DIAPHRAGM RELEASE |
| CF1-0697-000 | D | 1 | LEVER, DIAPHRAGM CHARGE |
| CF1-0698-000 | D | 1 | LEVER, WINDING STOPPER |
| CF1-0699-000 | D | 1 | LEVER, STOPPER CHARGE |
| CF1-0700-000 | E | 1 | LEVER, CHARGE |
| CF1-0747-000 | E | 1 | LEVER, ARMATURE |
| CG1-0133-000 | D | 1 | MAGNET-3 UNIT |
| CS1-4120-000 | E | 1 | SCREW |
| CS1-4121-000 | E | 1 | SCREW, SHAFT |
| CS1-5469-000 | D | 1 | SPRING, COIL |
| CS1-5470-000 | E | 1 | SPRING, COIL |
| CS1-6362-000 | E | 1 | SPRING |
| CS1-6363-000 | E | 1 | SPRING |
| CS1-6364-000 | E | 1 | SPRING |
| CS1-6365-000 | E | 1 | SPRING |
| CS1-6366-000 | E | 1 | SPRING |
| CS1-6367-000 | E | 1 | SPRING |
| CS1-6388-000 | D | 1 | SPRING |
| CS1-6389-000 | D | 1 | SPRING |
| X91-1736-320 | | 1 | SCREW |
| X91-1737-350 | | 1 | SCREW |
| X98-0104-910 | | 1 | WASHER |
| X98-0205-030 | | 1 | WASHER |
| X98-0304-450 | | 1 | WASHER |
| XA1-1170-409 | | 1 | SCREW |
| XA1-3170-189 | | 1 | SCREW |
| XA1-3170-359 | | 2 | SCREW |
| XA1-7170-189 | | 1 | SCREW |
| XD1-1101-531 | | 1 | WASHER |
| XD1-1101-820 | | 1 | WASHER |
| XD1-1102-320 | | 1 | WASHER |
| XD2-1100-102 | | 1 | RING, E |
| XD2-1100-131 | | 1 | RING, E |

REF. NO. CI2-0751

# CANON NEW F-1




CA1-1958-000 detail

| | A | SIZE |
|---|---|---|
| A | 1.40 mm | (140) |
| | 1.70 mm | (170) |
| | 1.85 mm | (185) |
| | 2.00 mm | (200) |

CA1-2390-000 detail

| | A | SIZE |
|---|---|---|
| A | 0.1 mm | (010) |
| | 0.2 mm | (020) |

CA1-2396-000 detail

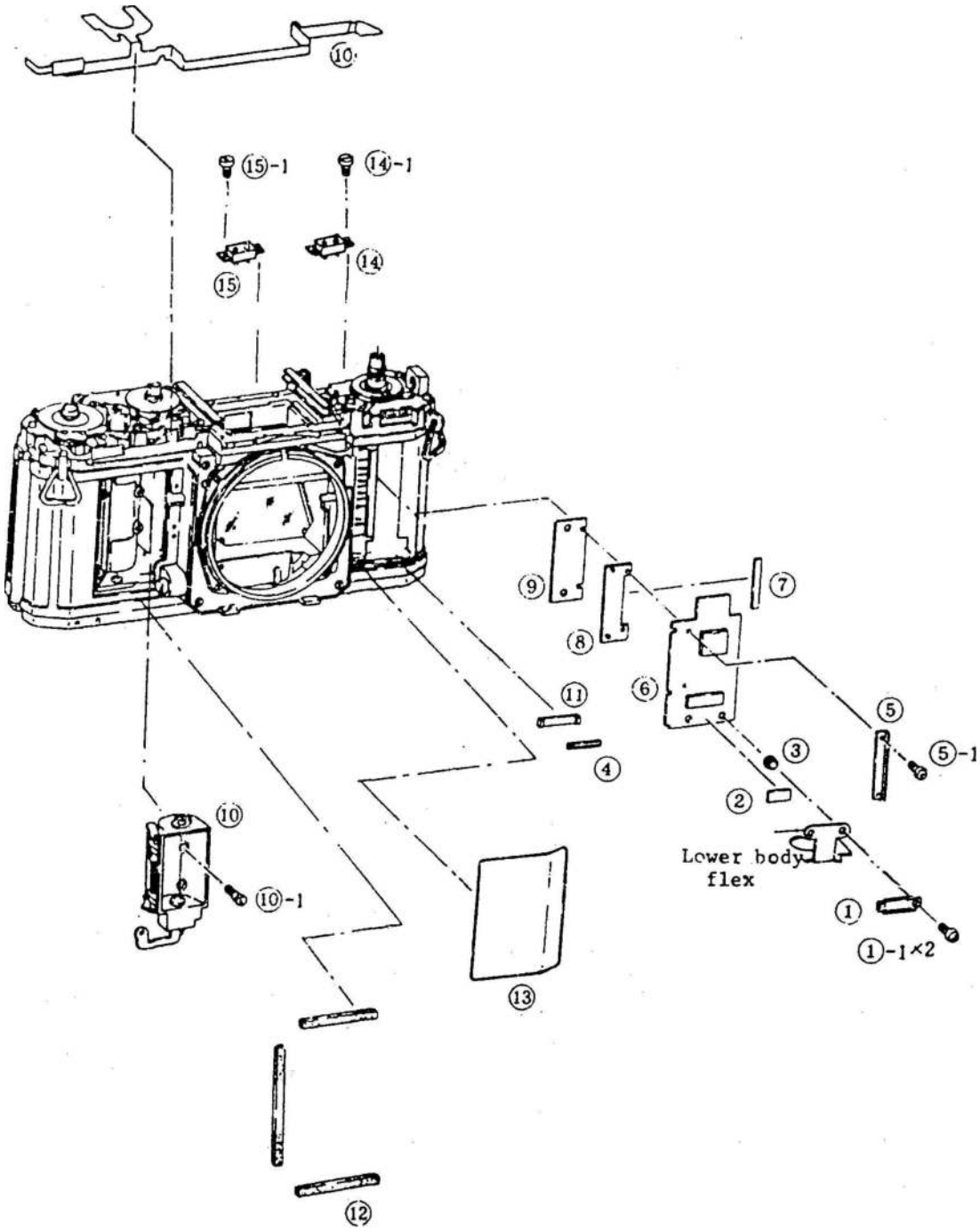
| | A | SIZE |
|---|---|---|
| A | 0.15 mm | (015) |
| | 0.18 mm | (018) |
| | 0.20 mm | (020) |
| | 0.25 mm | (025) |

ACF-710

CS1-5466-000 detail

| | A | SIZE |
|---|---|---|
| A | ⌀0.60 mm | (060) |
| | ⌀0.65 mm | (065) |
| | ⌀0.70 mm | (070) |
| | ⌀0.75 mm | (075) |

## 4. Front body




Numbers 1-16

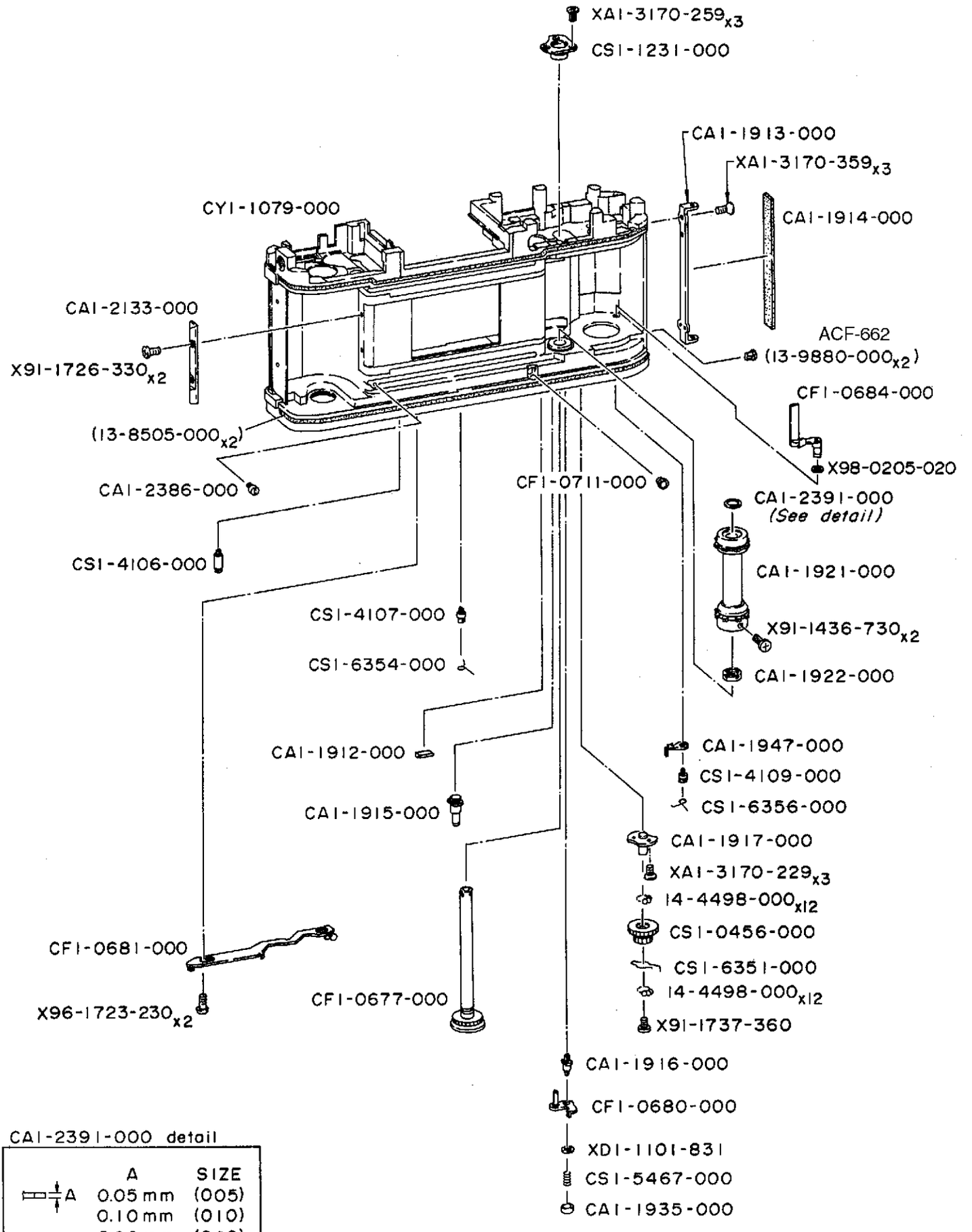
# PARTS LIST

REF.NO.C12-0751

| NEW PARTS NO. | CLASS | QTY | DESCRIPTION |
|---|---|---|---|
| 13-9872-000 | B | 2 | RING, NECK STRAP |
| 14-4498-000 | C | 39 | BALL, STEEL |
| CA1-1919-000 | E | 1 | SHAFT, IDLER |
| CA1-1920-000 | E | 1 | SHAFT, BRAKE |
| CA1-1924-000 | D | 3 | SCREW |
| CA1-1928-000 | E | 2 | WASHER |
| CA1-1929-000 | C | 2 | LEATHER, 1ST CURTAIN BRAKE |
| CA1-1930-000 | D | 1 | DISK, 1ST CURTAIN BRAKE |
| CA1-1931-000 | E | 1 | NUT, BRAKE |
| CA1-1951-000 | E | 1 | BASE, CONTACT |
| CA1-1952-000 | D | 1 | CONTACT, X |
| CA1-1953-000 | D | 2 | INSULATOR |
| CA1-1954-000 | D | 1 | CONTACT |
| CA1-1955-000 | D | 1 | CONTACT |
| CA1-1958-000(XXX) | D | 1 | STOPPER, X CONTACT |
| CA1-2390-000(XXX) | DD | 1 | WASHER |
| CA1-2396-000(XXX) | D | 1 | WASHER |
| CA1-2483-000 | D | 1 | INSULATOR |
| CF1-0678-000 | E | 1 | BRAKE, 1ST CURTAIN |
| CF1-0679-000 | E | 1 | LEVER, 1ST CURTAIN BRAKE SET |
| CS1-0458-000 | D | 1 | GEAR, SPROCKET |
| CS1-0459-000 | E | 1 | IDLER |
| CS1-4108-000 | E | 1 | SCREW |
| CS1-5466-000(XXX) | D | 1 | SPRING, COIL |
| CS1-6352-000 | E | 1 | SPRING |
| CY1-1179-000 | C | 2 | LUG, NECK STRAP |
| X91-1714-340 | | 3 | SCREW |
| X91-1736-950 | | 2 | SCREW |
| X91-1737-370 | | 1 | SCREW |
| X98-0403-960 | | 1 | WASHER |
| XA1-1170-709 | | 2 | SCREW |

REF. NO. C12-0751

# CANON NEW F-1




CA1-2391-000 detail

| | A | SIZE |
|---|---|---|
| A | 0.05 mm | (005) |
| | 0.10 mm | (010) |
| | 0.20 mm | (020) |

# PARTS LIST

REF.NO.C12-0751

| NEW PARTS NO. | CLASS | QTY | DESCRIPTION |
|---|---|---|---|
| 13-8505-000 | A | 2 | SHIELD, LIGHT |
| 13-9880-000 | E | 2 | PIN, STOPPER |
| 14-4498-000 | C | 24 | BALL, STEEL |
| CA1-1912-000 | D | 1 | CUSHION |
| CA1-1913-000 | D | 1 | HOLDER, SHAFT |
| CA1-1914-000 | D | 1 | SHIELD, LIGHT |
| CA1-1915-000 | E | 1 | STUD |
| CA1-1916-000 | E | 1 | SHAFT, RELEASE SPRING |
| CA1-1917-000 | E | 1 | SHAFT, GEAR |
| CA1-1921-000 | D | 1 | SPROCKET |
| CA1-1922-000 | E | 1 | CLUTCH, SPROCKET |
| CA1-1935-000 | E | 1 | NUT |
| CA1-1947-000 | E | 1 | LEVER, SWITCH(E) |
| CA1-2133-000 | C | 1 | STABILIZER, CARTRIDGE |
| CA1-2386-000 | D | 1 | GUIDE, FILM |
| CA1-2391-000(XXX) | D | 1 | WASHER |
| CF1-0677-000 | D | 1 | GEAR, SPROCKET |
| CF1-0680-000 | E | 1 | RELEASE, MECHANICAL |
| CF1-0681-000 | D | 1 | SLIDE, MECHANICAL RELEASE |
| CF1-0684-000 | E | 1 | LEVER, ACTIVATOR |
| CF1-0711-000 | D | 1 | CONTACT, DATA BACK |
| CS1-0456-000 | D | 1 | GEAR |
| CS1-1231-000 | E | 1 | STUD,WINDING GEAR |
| CS1-4106-000 | E | 1 | STUD |
| CS1-4107-000 | E | 1 | STUD |
| CS1-4109-000 | E | 1 | STUD |
| CS1-5467-000 | D | 1 | SPRING, COIL |
| CS1-6351-000 | E | 1 | SPRING |
| CS1-6354-000 | E | 1 | SPRING |
| CS1-6356-000 | E | 1 | SPRING |
| CY1-1079-000 | E | 1 | BODY |
| X91-1436-730 | | 2 | SCREW |
| X91-1726-330 | | 2 | SCREW |
| X91-1737-360 | | 1 | SCREW |
| X96-1723-230 | | 2 | SCREW |
| X98-0205-020 | | 1 | WASHER |
| XA1-3170-229 | | 3 | SCREW |
| XA1-3170-259 | | 3 | SCREW |
| XA1-3170-359 | | 3 | SCREW |
| XD1-1101-831 | | 1 | WASHER |

# E L E C T R I C  P A R T S  L I S T

REF.NO.C12-0751

| NEW | SYMBOL | PARTS NO. | CLASS | QTY | DESCRIPTION | REMARK | |
|---|---|---|---|---|---|---|---|
| | | CY4-0055-000 | D | 1 | RESISTOR, HIGH VOLTAGE | 50 OHM 1/8W | ACF-545 |
| | IC1 | CH4-0055-000 | C | 1 | IC | T2682A | |
| | R1 | VR9-1103-000 | E | 1 | RESISTOR | 33KOHM 1/8W | |
| | R1 | VR9-1109-000 | E | 1 | RESISTOR | 56KOHM 1/8W | |
| | R1 | VR9-1367-000 | E | 1 | RESISTOR | 24.9KOHM 1/8W | |
| | R1 | VR9-1412-000 | E | 1 | RESISTOR | 91KOHM 1/8W | |
| | R1 | VR9-1753-000 | E | 1 | RESISTOR | 47KOHM 1/8W | |
| | R1 | VR9-1888-000 | E | 1 | RESISTOR | 27KOHM 1/8W | |
| | R1 | VR9-1889-000 | E | 1 | RESISTOR | 30KOHM 1/8W | |
| | R1 | VR9-1891-000 | E | 1 | RESISTOR | 36KOHM 1/8W | |
| | R1 | VR9-1892-000 | E | 1 | RESISTOR | 39KOHM 1/8W | |
| | R1 | VR9-1893-000 | E | 1 | RESISTOR | 43KOHM 1/8W | |
| | R1 | VR9-1897-000 | E | 1 | RESISTOR | 68KOHM 1/8W | |
| | R1 | VR9-1899-000 | E | 1 | RESISTOR | 82KOHM 1/8W | |
| | R1 | VR9-1970-000 | E | 1 | RESISTOR | 300KOHM 1/8W | |
| | R1 | VR9-2098-000 | E | 1 | RESISTOR | 130KOHM 1/8W | |
| | R1 | VR9-2099-000 | E | 1 | RESISTOR | 180KOHM 1/8W | |
| | R1 | VR9-3055-000 | E | 1 | RESISTOR | 23.7 KOHM 1/8W | |
| | R2 | VR9-1103-000 | E | 1 | RESISTOR | 33KOHM 1/8W | |
| | R2 | VR9-1109-000 | E | 1 | RESISTOR | 56KOHM 1/8W | |
| | R2 | VR9-1367-000 | E | 1 | RESISTOR | 24.9KOHM 1/8W | |
| | R2 | VR9-1412-000 | E | 1 | RESISTOR | 91KOHM 1/8W | |
| | R2 | VR9-1753-000 | E | 1 | RESISTOR | 47KOHM 1/8W | |
| | R2 | VR9-1888-000 | E | 1 | RESISTOR | 27KOHM 1/8W | |
| | R2 | VR9-1889-000 | E | 1 | RESISTOR | 30KOHM 1/8W | |
| | R2 | VR9-1891-000 | E | 1 | RESISTOR | 36KOHM 1/8W | |
| | R2 | VR9-1892-000 | E | 1 | RESISTOR | 39KOHM 1/8W | |
| | R2 | VR9-1893-000 | E | 1 | RESISTOR | 43KOHM 1/8W | |
| | R2 | VR9-1897-000 | E | 1 | RESISTOR | 68KOHM 1/8W | |
| | R2 | VR9-1899-000 | E | 1 | RESISTOR | 82KOHM 1/8W | |
| | R2 | VR9-1970-000 | E | 1 | RESISTOR | 300KOHM 1/8W | |
| | R2 | VR9-2098-000 | E | 1 | RESISTOR | 130KOHM 1/8W | |
| | R2 | VR9-2099-000 | E | 1 | RESISTOR | 180KOHM 1/8W | |
| | R2 | VR9-3055-000 | E | 1 | RESISTOR | 23.7KOHM 1/8W | |
| | R6 | CH9-0059-000 | E | 1 | RESISTOR | 1.96KOHM | |
| | R6 | CH9-0060-000 | E | 1 | RESISTOR | 2.0KOHM | |
| | R6 | CH9-0061-000 | E | 1 | RESISTOR | 2.05KOHM | |
| | R1 | VR9-1421-000 | E | 1 | RESISTOR | 301KOHM 1/8W | |
| | RMTV | VR5-0131-400 | E | 1 | RESISTOR | 140 OHM 1/8W | ACF-642 |
| | RMTV | VR5-0131-690 | E | 1 | RESISTOR | 169 OHM 1/8W | ACF-642 |

# E L E C T R I C  P A R T S  L I S T

REF.NO.C12-0751

| NEW | SYMBOL | PARTS NO. | CLASS | QTY | DESCRIPTION | REMARK |
|---|---|---|---|---|---|---|
| | RMTV | VR5-0131-960 | E | 1 | RESISTOR | 196 OHM 1/8W ACF-642 |
| | RMTV | VR5-0132-260 | E | 1 | RESISTOR | 226 OHM 1/8W ACF-642 |
| | RMTV | VR5-0132-490 | E | 1 | RESISTOR | 249 OHM 1/8W ACF-642 |
| | RMTV | VR5-0132-740 | E | 1 | RESISTOR | 274 OHM 1/8W ACF-642 |
| | RMTV | VR5-0133-010 | E | 1 | RESISTOR | 301 OHM 1/8W ACF-642 |
| | RMTV | VR5-0133-320 | E | 1 | RESISTOR | 332 OHM 1/8W ACF-642 |
| | RMTV | VR5-0133-650 | E | 1 | RESISTOR | 365 OHM 1/8W ACF-642 |
| | RMTV | VR5-0133-830 | E | 1 | RESISTOR | 383 OHM 1/8W ACF-642 |
| | RMTV | VR5-0140-101 | E | 1 | RESISTOR | 100 OHM 1/8W ACF-642 |
| | RMTV | VR5-0140-121 | E | 1 | RESISTOR | 120 OHM 1/8W ACF-642 |
| | RMTV | VR5-0140-180 | E | 1 | RESISTOR | 18OHM 1/8W ACF-642 |
| | RMTV | VR5-0140-470 | E | 1 | RESISTOR | 47OHM 1/8W ACF-642 |
| | RMTV | VR5-0140-750 | E | 1 | RESISTOR | 75OHM 1/8W ACF-642 |
| | RAE | VR5-0131-822 | E | 1 | RESISTOR | 18.2 KOHM 1/8W ACF-642 |
| | RAE | VR5-0132-002 | E | 1 | RESISTOR | 20.0 KOHM 1/8W ACF-642 |
| | RAE | VR5-0132-212 | E | 1 | RESISTOR | 22.1 KOHM 1/8W ACF-642 |
| | RAE | VR5-0132-432 | E | 1 | RESISTOR | 24.3 KOHM 1/8W ACF-642 |
| | RAE | VR5-0132-742 | E | 1 | RESISTOR | 27.4 KOHM 1/8W ACF-642 |
| | RAE | VR5-0133-012 | E | 1 | RESISTOR | 30.1 KOHM 1/8W ACF-642 |
| | RAE | VR5-0133-322 | E | 1 | RESISTOR | 33.2 KOHM 1/8W ACF-642 |
| | RAE | VR5-0133-652 | E | 1 | RESISTOR | 36.5 KOHM 1/8W ACF-642 |
| | RAE | VR5-0133-922 | E | 1 | RESISTOR | 39.2 KOHM 1/8W ACF-642 |
| | RAE | VR5-0134-322 | E | 1 | RESISTOR | 43.2 KOHM 1/8W ACF-642 |
| | RAE | VR5-0134-752 | E | 1 | RESISTOR | 47.5 KOHM 1/8W ACF-642 |
| | RAE | VR5-0135-112 | E | 1 | RESISTOR | 51.1 KOHM 1/8W ACF-642 |
| | | VR5-0140-103 | E | 1 | RESISTOR | 10 KHOM 1/8W AG1-036 |
| | R42 | VR9-1103-000 | E | 1 | RESISTOR | 33 KHOM 1/8W |
| | R42 | VR9-1109-000 | E | 1 | RESISTOR | 56 KHOM 1/8W |
| | R42 | VR9-1306-000 | E | 1 | RESISTOR | 86.6 KHOM 1/8W |
| | R42 | VR9-1308-000 | E | 1 | RESISTOR | 95.3 KHOM 1/8W |
| | R42 | VR9-1309-000 | E | 1 | RESISTOR | 100 KHOM 1/8W |
| | R42 | VR9-1310-000 | E | 1 | RESISTOR | 105 KHOM 1/8W |
| | R42 | VR9-1311-000 | E | 1 | RESISTOR | 110 KHOM 1/8W |
| | R42 | VR9-1312-000 | E | 1 | RESISTOR | 115 KHOM 1/8W |
| | R42 | VR9-1313-000 | E | 1 | RESISTOR | 121 KHOM 1/8W |
| | R42 | VR9-1314-000 | E | 1 | RESISTOR | 127 KHOM 1/8W |
| | R42 | VR9-1315-000 | E | 1 | RESISTOR | 133 KHOM 1/8W |
| | R42 | VR9-1316-000 | E | 1 | RESISTOR | 140KHOM 1/8W |
| | R42 | VR9-1317-000 | E | 1 | RESISTOR | 147KHOM 1/8W |
| | R42 | VR9-1318-000 | E | 1 | RESISTOR | 154 KHOM 1/8W |

# E L E C T R I C  P A R T S  L I S T

REF.NO.C12-0751

| NEW | SYMBOL | PARTS NO. | CLASS | QTY | DESCRIPTION | REMARK |
|---|---|---|---|---|---|---|
| | R42 | VR9-1597-000 | E | 1 | RESISTOR | 51 KHOM 1/8W |
| | R42 | VR9-1753-000 | E | 1 | RESISTOR | 47 KHOM 1/8W |
| | R42 | VR9-1885-000 | E | 1 | RESISTOR | 16 KHOM 1/8W |
| | R42 | VR9-1887-000 | E | 1 | RESISTOR | 24 KHOM 1/8W |
| | R42 | VR9-1892-000 | E | 1 | RESISTOR | 39 KHOM 1/8W |
| | R42 | VR9-1896-000 | E | 1 | RESISTOR | 62 KHOM 1/8W |
| | R42 | VR9-1897-000 | E | 1 | RESISTOR | 68 KHOM 1/8W |
| | R42 | VR9-1898-000 | E | 1 | RESISTOR | 75 KHOM 1/8W |
| | R42 | VR9-1899-000 | E | 1 | RESISTOR | 82 KHOM 1/8W |
| | RTSC | VR5-0133-922 | E | 1 | RESISTOR | 39 KHOM 1/8W |
| | | VR5-0134-322 | E | 1 | RESISTOR | 43 KHOM 1/8W |
| | | VR5-0134-752 | E | 1 | RESISTOR | 47 KHOM 1/8W |
| | | VR5-0135-112 | E | 1 | RESISTOR | 51 KHOM 1/8W |
| | | VR5-0135-622 | E | 1 | RESISTOR | 56 KHOM 1/8W |
| | Tr2 | WA2-0229-000 | D | 1 | TRANSISTOR | 2SD813 |
| | VR2 | VR9-1660-000 | E | 1 | RESISTOR, VARIABLE | 330OHM |
| | | Y11-3701-000 | | | LEAD | WHITE |
| | | Y11-3702-000 | | | LEAD | BLACK |
| | | Y11-3707-000 | | | LEAD | YELLOW |
| | | Y11-3901-000 | | | LEAD | WHITE |
| | | Y11-3903-000 | | | LEAD | RED |
| | | Y11-3906-000 | | | LEAD | ORANGE |
| | | Y11-3909-000 | | | LEAD | GREEN |
| | | Y11-4501-000 | | | LEAD | WHITE |
| | | Y11-4502-000 | | | LEAD | BLACK |
| | | Y11-4503-000 | | | LEAD | RED |
| | | Y11-4506-000 | | | LEAD | ORANGE |
| | | Y11-4507-000 | | | LEAD | YELLOW |
| | | Y11-4509-000 | | | LEAD | GREEN |
| | | Y11-4511-000 | | | LEAD | BLUE |
| | | Y11-4512-000 | | | LEAD | PURPLE |
| | | Y11-4514-000 | | | LEAD | GRAY |
| | | Y11-7312-000 | | | HEAT SHRINKABLE TUBE | |

**Disassembly Notes**

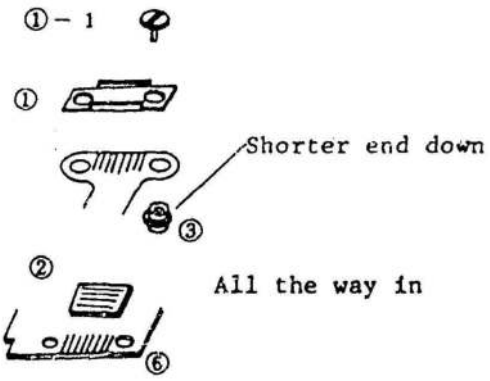
1. To remove the main circuit board (6), the lower body flex must be moved slightly.

2. When the battery cover is removed, temporarily replace the earth (grounding) screw.

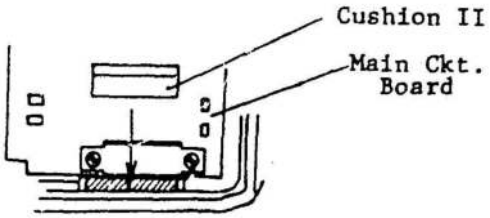
**Assembly and Adjustment Notes**

1. Apply electrolub to the connector portions of the main circuit board (6) and lower body flex.

2. Clean the elastic connectors (2) and (7) with electrolub.




3. Install cushion II (4) as shown below.




**Assembly and Adjustment Notes**

4. Clean the connector portions of the resistor board (R Board) (9) and main circuit board (6) (rear side) and apply electrolub.

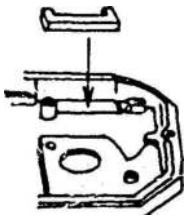
5. Install the resistor board (9) into the body. Put diabond on the rear of the board around the mounting holes.

6. Battery Chamber Unit (10) Post Installation Checks

   6.1. Without a battery installed, the swinging release rod (p/6 the battery chamber unit) must overlap the release pin below it by at least 1/2 the pin diameter.

   6.2. When the minus contact of the battery box is pressed down and then released slowly, the rod must return completely and smoothly.

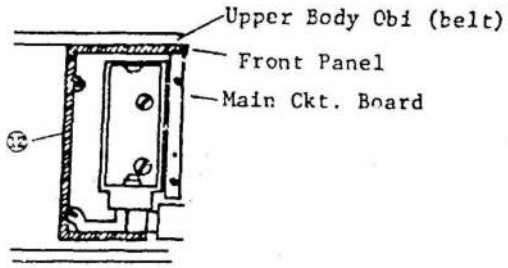
7. Install cushion I (11) as shown below. Push it in until it is flush against the main circuit board and diabond it to the body.

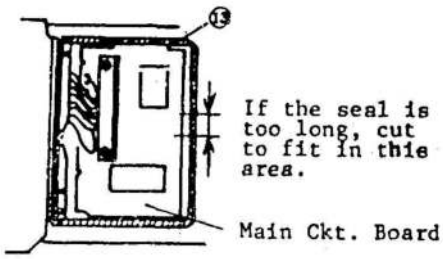


Note: Numbers in parentheses in the text correspond to circled numbers on page 12. Disassemble in normal order and reassemble in reverse order.

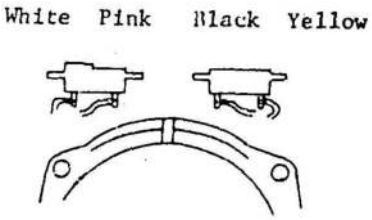
## Assembly and Adjustment Notes

8. Attach the light shield (12) and seal (13) as shown.




9. Pentaprism Contact Installation




9.1. Don't interchange the position of the left and right contacts, or reverse either of them.

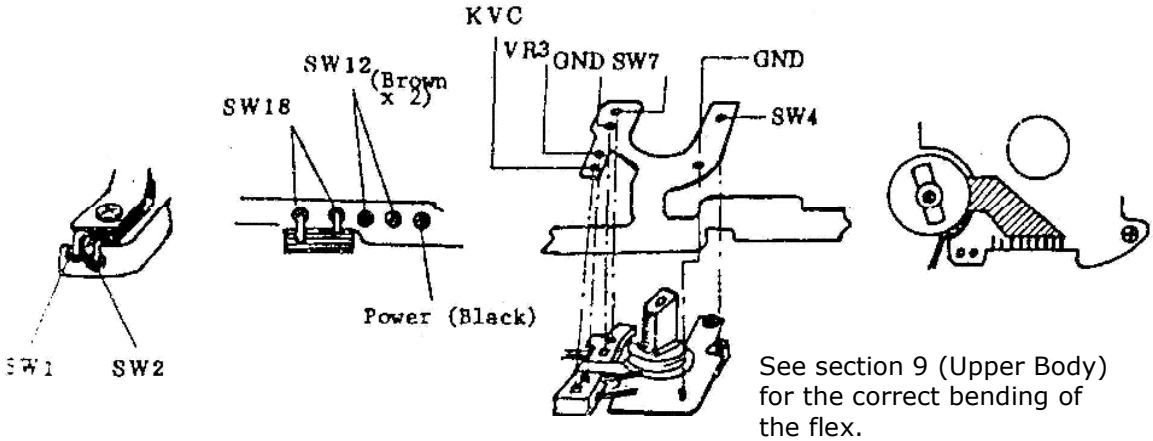
9.2. Solder the leads as quickly as possible. Excessive heat will loosen the contact pins.

10. Main Flex Installation

10.1. Solder the main flex (16) at the following positions.

10.2. To prevent the main flex from interfering with the top cover screw holes, fix it with double-sided tape.

10.3. The brown leads to SW12 are interchangeable.




See section 9 (Upper Body) for the correct bending of the flex.

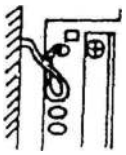
Note: Numbers in parentheses in the text correspond to circled numbers on page 12. Disassemble in normal order and reassemble in reverse order.

11. Front Panel Lead Soldering

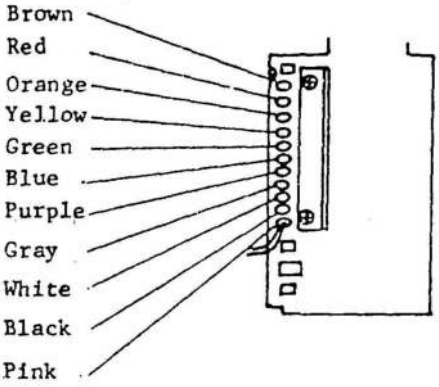
11.1. Put flux on the main circuit board solder lands.

11.2. Solder from the bottom up.

11.3. Dress extra lead toward the bottom as shown.

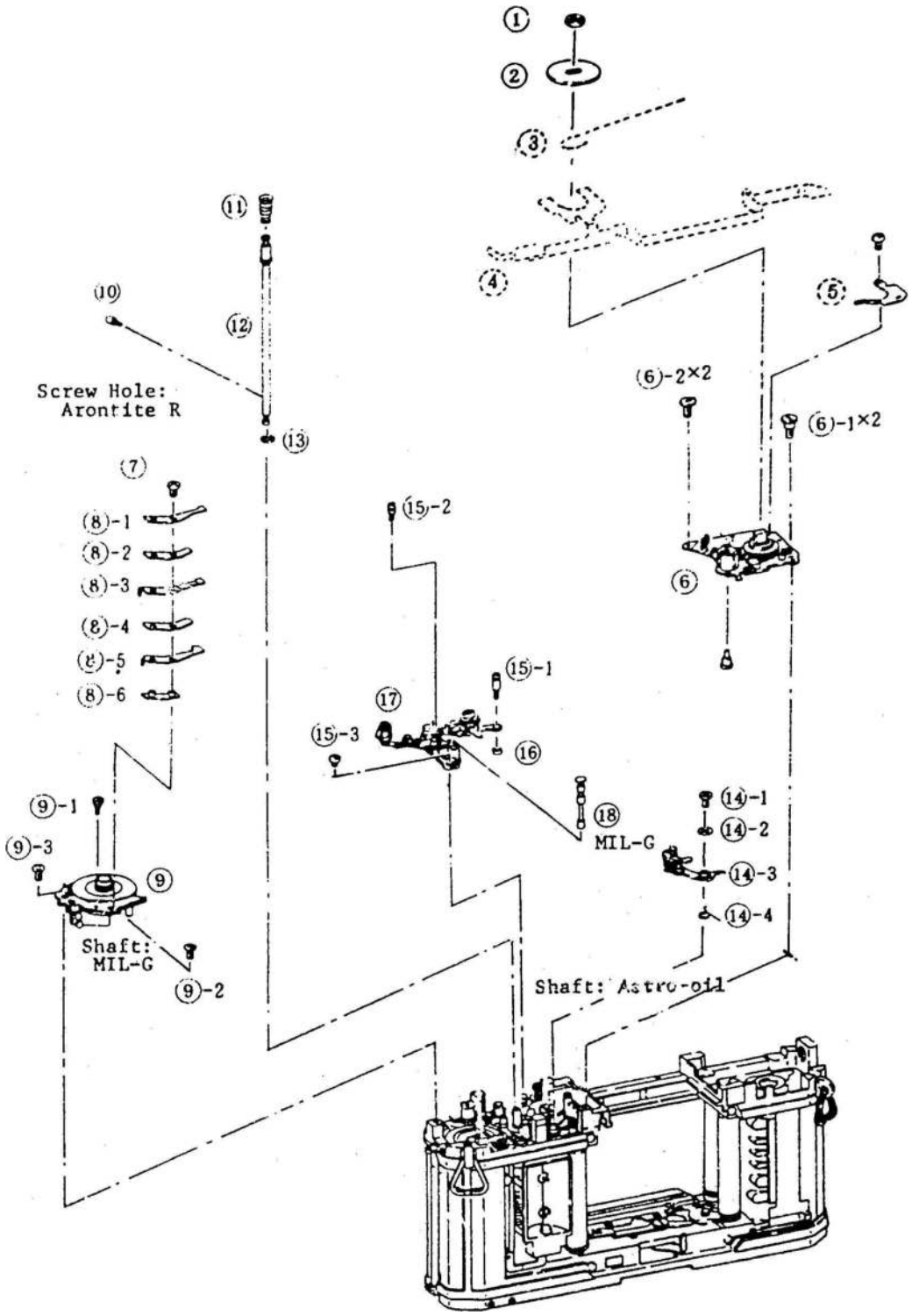


Note: The thick white lead goes to the P.C. terminal.




Note: Numbers in parentheses in the text correspond to circled numbers on page 12. Disassemble in normal order and reassemble in reverse order.

## 5. Upper Body (Winding side)




(6) can be displaced without removing (1) - (5)

**Disassembly Note**

1. Shutter Speed Selector

1.1. To remove the shutter speed selector (6), unsolder the black lead from SW4 and remove four screws [(6)-1 x 2 and (6)-2 x 2].

Notes:

1. One of the (6)-1 screws is partially hidden by flex (5) and hard to remove.

2. Be careful not to damage the main flex.

1.2 To remove the selector (6) completely, unsolder the black and brown leads and disengage the tungsten cable.

1.3 To temporarily remove (6) without removing the tungsten cable:

1) Set the shutter to the "B" position and remove the screws. Carefully lift the selector off.

2) Place the selector out of the way but where the cable will remain taut and not become kinked.

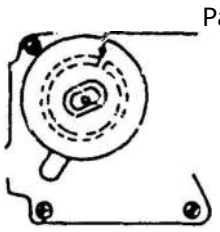
2. Mounting screw (9)-2 for the winding base is under main switch (8).

3. The entire 2nd curtain brake assembly (17) can be removed without disassembling it by removing three screws (15) and collar (16). Disengage the brake lever from the master gear and (17) can be removed.

**Assembly and Adjustment Notes**

1. The shutter speed selector (6) TV double brushes must be aligned both vertically and radially, so they will both make contact with the correct pad.

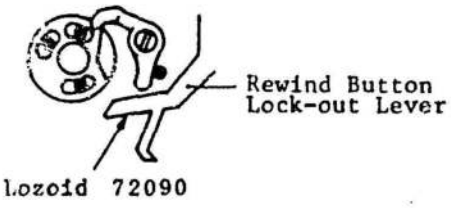
2. Clean the TV resistor board (2) and install it so that break in the pattern is at the upper right with the shutter at "A".




3. Shutter Speed Selector (6)

3.1 Installation

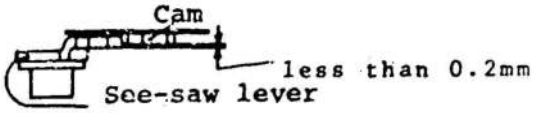
1) Lubricate the (Upper) Rewind button lock-out lever with Lozoid 72090.



3.2 Post-Installation Checks

1) Check that the see-saw lever works smoothly.

2) There should be less than 0.2mm difference in the height of the fixed cam and see-saw lever.

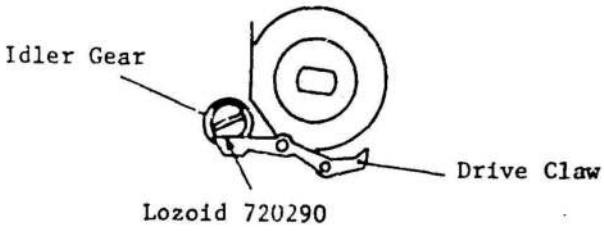


**Assembly and Adjustinent Notes**

4. Winding Unit (9) Installation

   4.1. Lubricate the winding coupler joint with MIL-G.

   4.2. Lubricate the friction surfaces of the idler gear and frame counter drive claw with Lozoid 72090.




   4.3. Install with the frame counter drive claw pulled out of the way.

5. Put a little Arontite L in the Key screw (10) hole in the sprocket shaft (12) and install the screw.

6. 2nd Curtain Cam Follower (13)-3 Installation

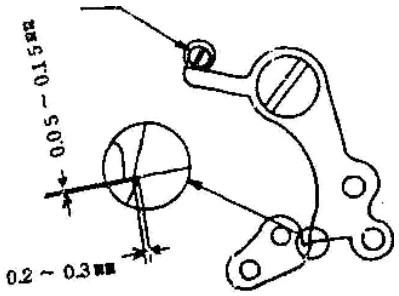
   6.1. In the wound condition, the gap between the 2nd Curtain Cam Follower and the hook should be 0.05 to 0.15mm. Adjustment: The follower is available in several sizes.

   6.2. Lubricate the pivot shaft with astro-oil.

   6.3. The end play of the follower should be less than 0.15mm, and it must return by the spring pressure.

   6.4. The mesh of the follower and the hook should be 0.2 to 0.3mm. Adjustment: Eccentric

   6.5. Lubricate the mesh surfaces of the follower and hook with astro-oil.




7. 2nd Curtain Release Lever

   7.1. Lubricate the shaft with astro-oil.

   7.2. Thrust play should be under 0.05mm and end play under 0.2mm. Use washers to adjust the play.

8. 2nd Curtain Brake Assembly (17)

   8.1. While holding the brake lever out of the way (toward the prism rails), slip the brake assembly (17) into place under the master gear.

   8.2. Tighten the screws starting with the one at the front (mount) side.

Note: Numbers in parentheses in the text correspond to circled numbers on page 16. Disassemble in normal order and reassemble in reverse order.

## 6. Tungsten cable adjustment

**Assembly and Adjustment Notes**

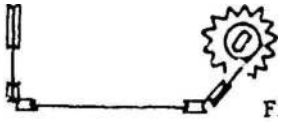
1. Put the knotted end of the cable into the slot in the indicator pulley. Charge the pulley one revolution and temporarily install a pin to hold it.

2. Check that the cable lies correctly in the pulley.

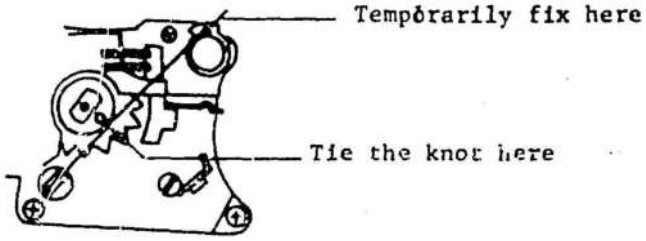
3. Set the shutter dial at "B".

4. Thread the cable as shown in figure 1.

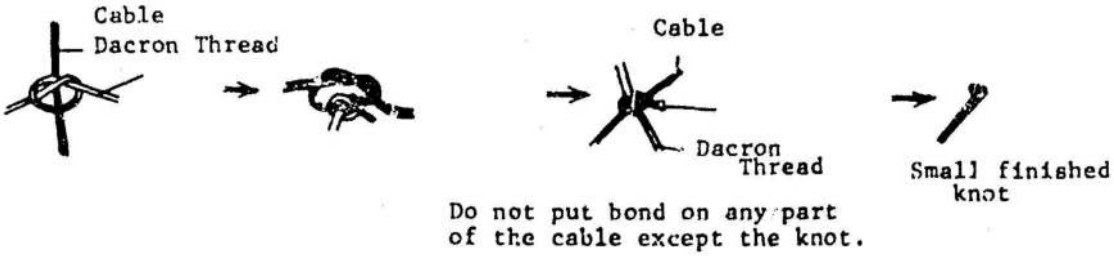
Information pulley




5. Remove the pin from the indicator pulley and find the spot where the "B" appears in the finder. Temporarily fix the end as shown in figure 2. At the point on the shutter dial pulley where the slot is a very small knot must now be formed.




6. Tie the knot as shown below.




7. Insert the knot into the slot.

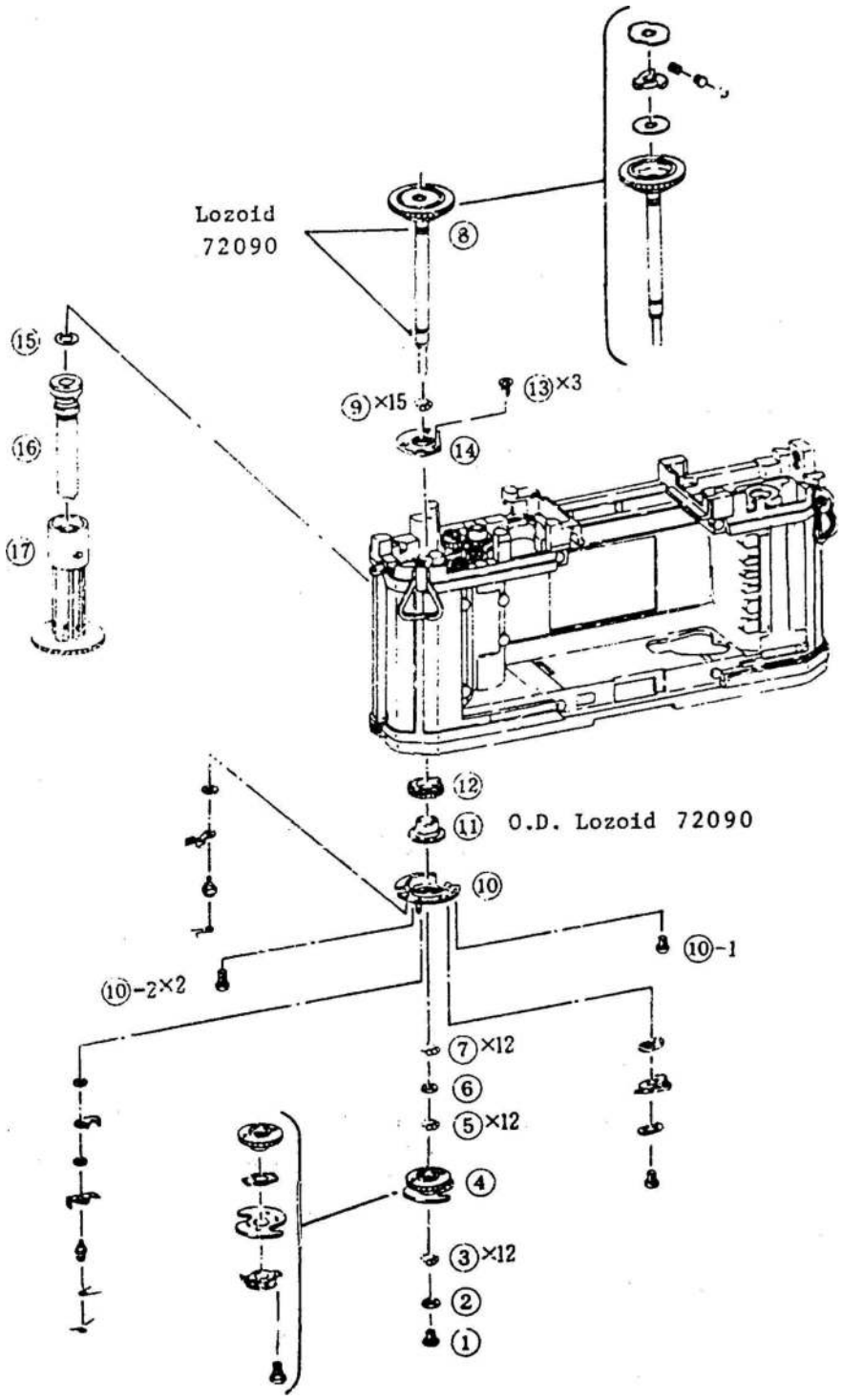
8. Put cyanobond on the knot slot. Do not get bond on the cable or in the pulley groove.

9. Check the entire range of shutter speeds. If they are not correctly aligned in the information window, adjust the nut on, the information pulley vertically until they are. After adjustment, stake the nut with black diabond.

10. Check that the right-side viewfinder information disappears when the dial is moved from 1/2000 to "A".

    Check that the right-side viewfinder information appears when the dial is moved from "A" to 1/2000 and remains visible through the entire shutter-speed range from 1/2000 to "B".

## 7. Spool




Steel Balls 3,5,7,9 Lozoid 72090

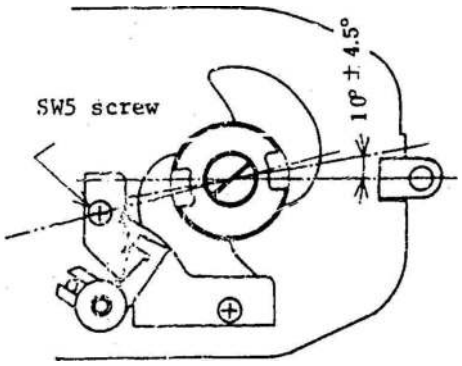
## Disassembly Notes

Be careful not to loose any of the bearing balls inside the camera. (See the facing page for the number of balls in each location.)

## Assembly and adjustment

1. Winding Coupler (4)

1.1 With the shutter completely wound {winding stopper engaged) , the winding coupler should be positioned as shown (10° ± 4.5° off the body centerline).




1.2 Visual angle check: the: line formed by the axis of the winding shaft and the mounting screw for SW5 is the maximum limit (14.5°) for the coupler.

2. Spool Torque

2.1 Lubricate the spool unit fiber friction washers with a mixture of FLA and PO A2 grease. (7:3)

2.2 Exercise the spool mechanism 30 to 50 times. Then measure the torque.
Std: 110 - 150 gcm

3. Post Assembly Checks

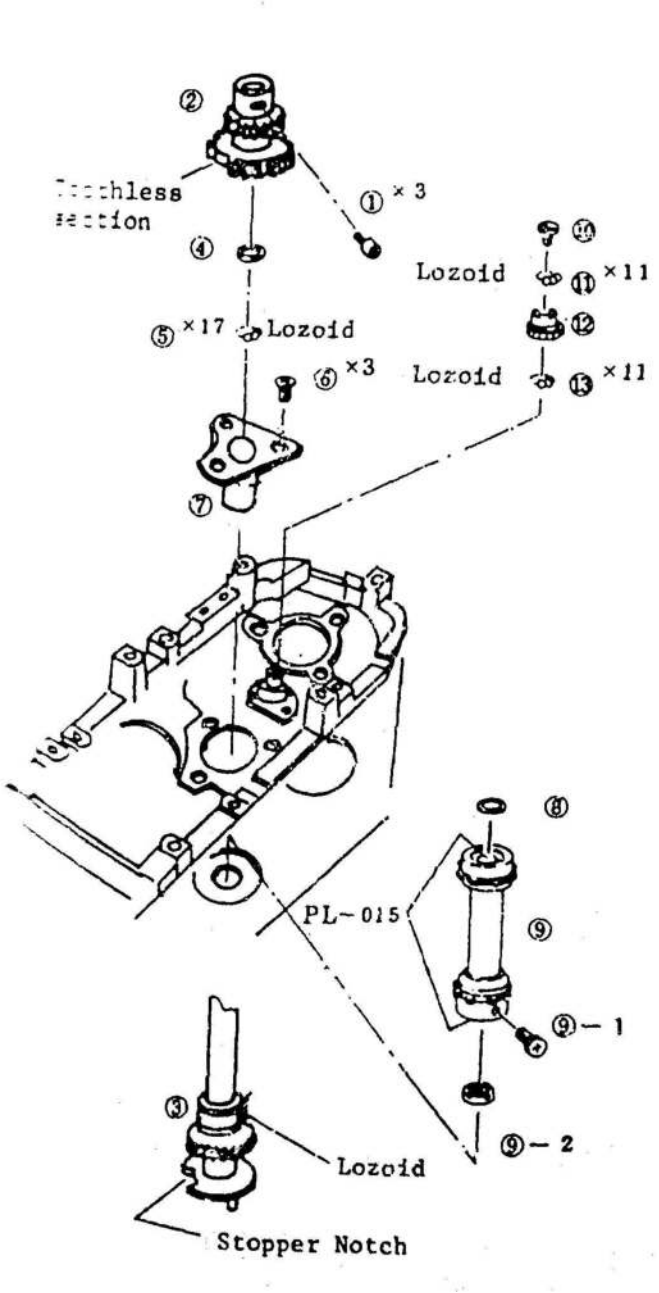
3.1 After the spool unit is installed in the camera the correct tension measured at the spool circumference (equivalent to spool friction torque) 170 to 230g.

3.2 Adjust the thrust play to 0.1 to 0.3mm by changing washer (15).

4. Adjust winding shaft thrust play to 0.05 to 0.15mm by changing washer (2).

Note: Numbers in parentheses in the text correspond to circled numbers on page 20. Disassemble in normal order and reassemble in reverse order.

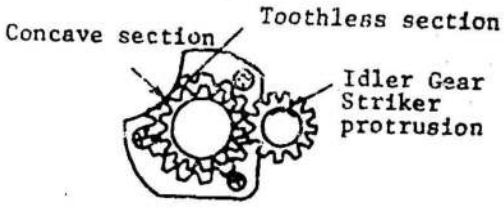
## 8. Sprocket




Lozoid: Loroid 72090

**Assembly and adjustment notes**

1. Lubricate the upper and lower sprocket bushings with PL-015.
2. Adjust thrust play to 0.1 to 0.2mmm with washer (8).
3. Align the toothless section of the main gear with the stopper notch in the sprocket shaft (3)
4. Adjust thrust play of the main gear to 0.03 to 0.15mm by-washer (4).
5. Align the main gear (2) and idler gear (12) as shown below and mesh them.




The protuding striker section should be as shown ±2 teeth.

# 9. Checks and adjustments

**Assembly and Adjustment Notes**

1. Shutter Curtains Installation

   1.1. In the wound condition, the leading edge of the 2nd curtain should be from 5.4 to 5.9mm from the edge of the film aperture.

   1.2. The leading edge should be parallel with the edge within 0.2mm.

   1.3. In the wound condition, the trailing edge of the 1st curtain should overlap the leading edge of the 2nd curtain by 2.0 to 2.5mm, and this overlap should be maintained throughout the winding cycle.

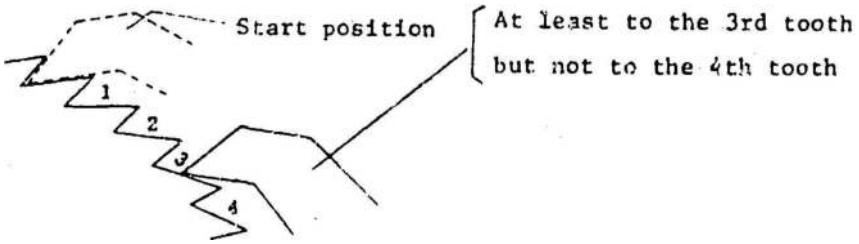
   1.4. The edge of the 1st curtain should be parallel with the edge of the 2nd curtain within 0.2mm.

   Note: The 2nd curtain "minus latch" should not latched at the full wound (5.4 - 5.9mm) position.

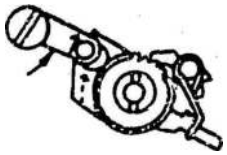
2. 1st Curtain Brake

   2.1. Check

1) From the maximum curtain travel position* to the fully wound condition, the ratchet should move from the start position to the middle of the third tooth.




2) Even if the brake lever is pushed in the direction to the end of its travel the ratchet should not go to the 4th tooth,



* Maximum curtain travel position: The curtains usually stop slightly short of this position because of the brakes. For accurate checks, they can be pushed to the maximum with the master gear.

**Assembly and Adjustment Notes**

2.2. 1st Curtain Brake Adjustment

From the maximum curtain travel position, wind, release the shutter with the seesaw lever at "B", and check the difference in the position where the curtain stops and the maximum curtain travel position. It should be no more than half-a-tooth on the master gear.

1) To increase brake torque, turn the nut CW, but don't overtighten it. When you reach the point where it starts to get tight, back off 90°.

2) To veaken torque, turn the nut CCW, but don't turn it too far. It should not be high enough to touch the cam follower at the maximum follower play.

3) If the adjustment cannot be made with the nut, three different diameters (strengths) of the coil spring are available (0.6, 0.65 and 0.7mm dia.).

4) After adjustment apply diabond to the nut. Do not use enough to increase the height of the nut.

3. 2nd Curtain Brake

3.1 Adjustment

1) Standard: 0 to 0.5 teeth (master gear) Check as explained in 2.2 above.

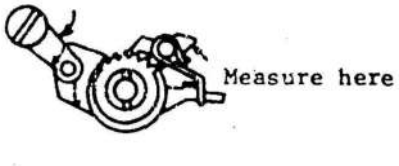
The nut must not exceed the height of the shutter speed selector base.

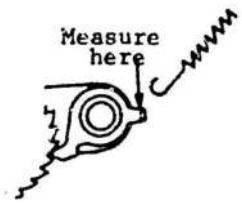
2) Other adjustments are identical to the 1st curtain brake adjustment.

3.2 Brake Torque Check (Reference)

Measure the tension at the ratchet pawl as indicated.

| | | |
|---|---|---|
| 1st Curatin Brake: | About 800g | 2nd Curtain Brake (with return spring disengaged) |



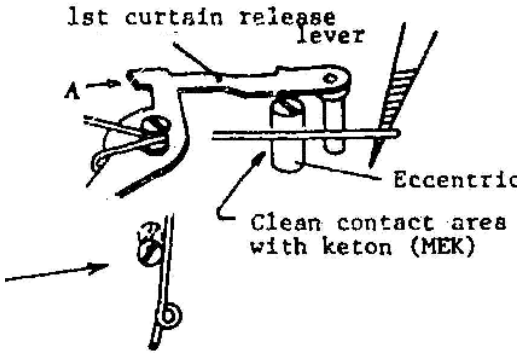



**Adjustment Notes**

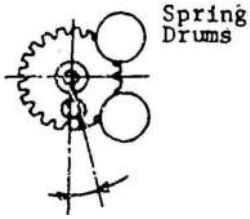
4. SW4 OFF Timing

4.1 Clean the contact surface with keton.
4.2 Slowly push the 1st curtain release lever in the "A" direction and note where the latch is released. Adjust the switch with the eccentric so that SW4 goes off at 0.1 to 0.2mm additional travel.

4.3 The eccentric should be adjusted so that longer side is toward the rear.




5. Dowel Gear Position




At the maximum curtain travel position, and with the camera mount toward you, the dowel should be within 0.5 teeth left to 1 tooth right of the centerline.

6. SW5 Timing

6.1 Switching Position

At a point 0.8mm from the bottom of the stopper notch on the engagement stroke of the stopper claw, SW5 should switch on.

1) Make sure that the stopper is not 0.8mm
from the bottom of the disengagement stroke.

2) Check the position of the drive pin.
It is different from engagement and disengagement.

3) Do not forget to retighten the nut after adjustment.

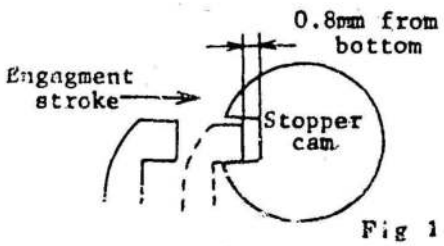



Fig 1

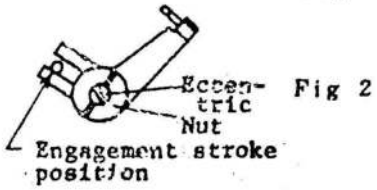
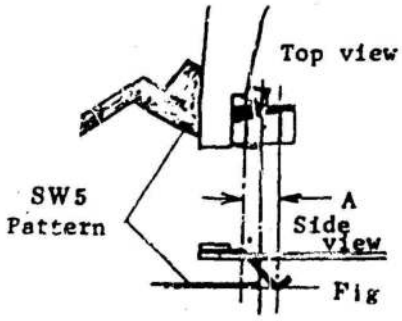



Fig 2




Fig

6.2 As a visual check of the SW5 brush position the edge of the pattern should be located approximately under the midpoint of the slope "A" of the brush.

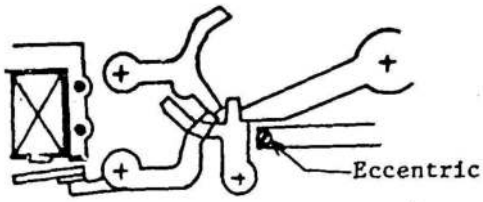
6.3 In the wound condition, SW5 must be off and turn on during winding.

6.4 After the check is finished, stake the nut with diabond.

**Adjustment Notes**

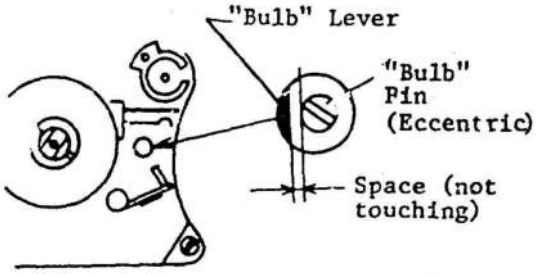
7. Mechanical Release Stroke Adjustment

The shutter should release at 1.4±0.15mm of the shutter button stroke. Adjust with the eccentric.




8. "Bulb" Pin Adjustment

Adjust so that at 1.25mm of the shutter button stroke the
"bulb" pin and "bulb" lever are not touching.

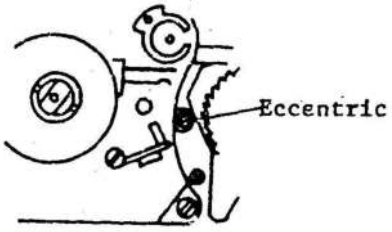



9. Rewind Button Release Stroke Adjustment

9.1 Close the back cover. Set the rewind (R) button.

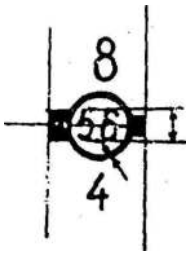
9.2 Adjust the eccentric so that the R button is released at 1.0±(0.2mm of the shutter button stroke.

9.3 Check that the sprocket is free and turns smoothly when the R button is set.




10. Following Needle Position

10.1 Mount the "tool standard" lens and set the diaphragm at f/5.6.

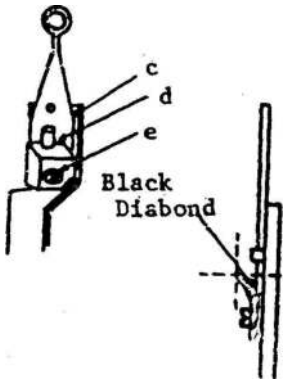



10.2 Limit: A line "a" through the center of the following must fall on the f/stop number (dimension "b"). The height of the f/stop numbers is equal to 0.6 f/stops.

10.3 There must be approximately the width of the following needle ring clearance between the outer edge of the needle circle and the edge of the aperture scale make.

10.4 After adjustment, apply a small amount of cyanobond at "c", "d" and "e".

10.5 Apply diabond to the root of the needle.



## Adjustment Notes

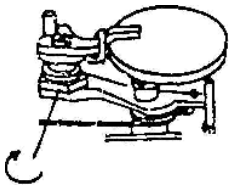
11. Mechanical Shutter

11.1 Curtain Travel Time

1) Standard: 7.5±0.2ms (1/1000)(34mm slit spacing).
2) Adjustment: Spring Drum Gear

11.2 Shutter Speed (Exposure Time)

1) Adjust at 1/250 using the 2nd Curtain Release Lever (Seesaw Lever) Turning the seesaw eccentric CW increases shutter speed.



2) Adjust 1/2000 with the 2nd curtain cam follower.

3) Adjust repeating steps 1 and 2 until the best balance of all speeds is obtained.

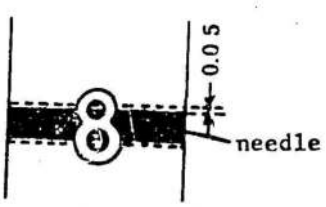
4) Shutter Accuracy (measured in EV)

Faster

1/2000, 1/1000: ±0.4EV
1/500 - 8 sec : ±0.2EV

12. Meter Position Adjustment

12.1 Connect a 10kohm variable resistor and microammeter in series to the + side of the power supply set to about 2V. Adjust the resistor for a current flow of 459uA through the meter.




The needle is 0.22 f/stops wide.

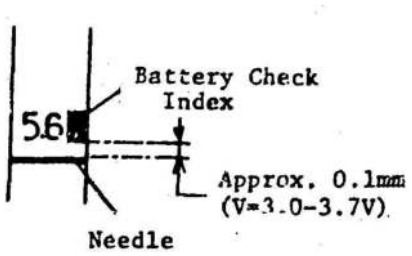
12.2 Adjust the meter housing position so that the meter needle is centered on the "8" ±0.05mm.

12.3 Adjust the current and check the following positions:

12.4 Bond the meter housing to the die casting with black diabond. (Do not leave any strings of bond.)

13. Battery Check and Low voltage Interlock[1]

13.1 Reduce the power supply voltage until the top of the meter needle is about 0.1mm below the bottom of the battery check index. At this point check that the applied voltage is from 3.0 to 3.7 volts.



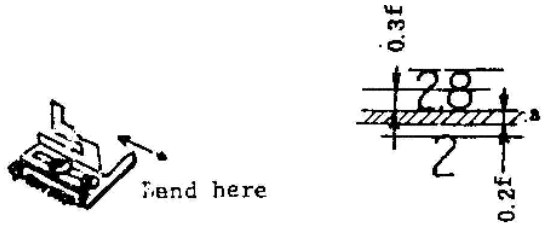

13.2 Check that the low voltage interlock activates at 3.2 volts.

Note: 1. Low voltage interlock is the voltage where shutter release is prevented by the cameras program.

## Adjustment Notes

14. Maximum Aperture (AVO) Indicator

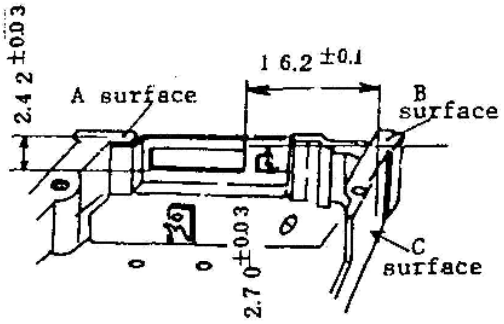
14.1 Set AVO= 2.8 (Max. Aperture Pin Height = 6.9±0.03mm)




14.2 Bend the lever (dwg.) so that the top of the red mark is positioned within the hatched area.

14.3 Check other maximum apertures. They should also fall within 0.3 to 0.5f of the same position.

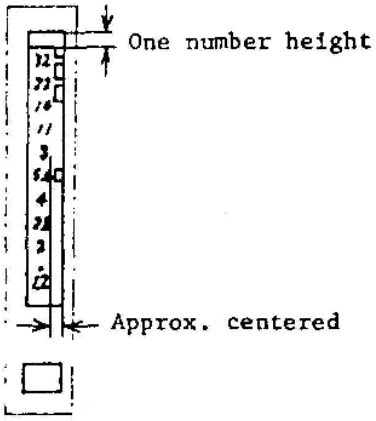
15. Aperture Mask Installation and Adjustment




15.1 The distance from the "A" surface to the bottom of the mask opening is 2.42±0.03mm.

15.2 The distance from the "B" surface to the bottom edge of the shutter speed opening is 2.70±0.03mm.

15.3 The distance from the C surface to the f/1.2 end of the aperture scale mask aperture is 16.2±0.1mm. When the mask is correctly positioned, bond it with diabond.



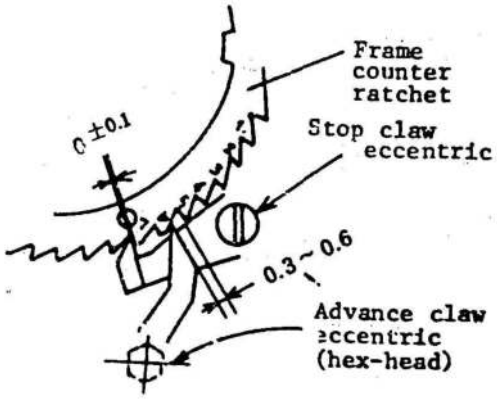

15.4 To position the aperture scale film, install the film with diabond, install the prism and position the film before the bond hardens.

16. Frame Counter Adjustment

16.1 With the frame counter in the returned position, the stop claw should be engaged and flush against the 7th tooth ±0.1 Adjust with the eccentric.

16.2 Adjust the advance claw with the hex-head eccentric so the tip of the claw is 0.3 to 0.6mm up the slope of the 5th ratchet tooth.

16.3 When the advance claw is at maximum stroke, adjust so that the clearance of the stop claw is 0.2 to 0.4mm.

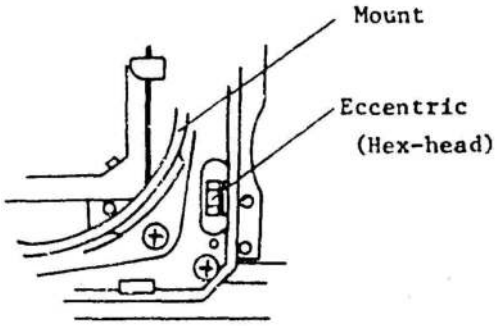


**Adjustment Notes**

17. Following Needle Hidden Position

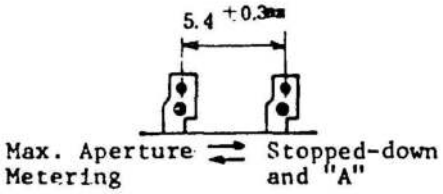
17.1 Activate the stop-down lever, with the lens on or off of "A", the following needle must not be visible.

17.2 Push the stop-down lever back into the normal position. With the lens off of "A" the following needle is visible. It must disappear when the lens is set to "A".




17.3 Adjust the hex-head eccentric (dwg.) to meet these requirements.

17.4 Following Needle Movement (Reference)




18. Release Stroke and Pressure (Checks)

18.1 Mechanical Release (without battery)

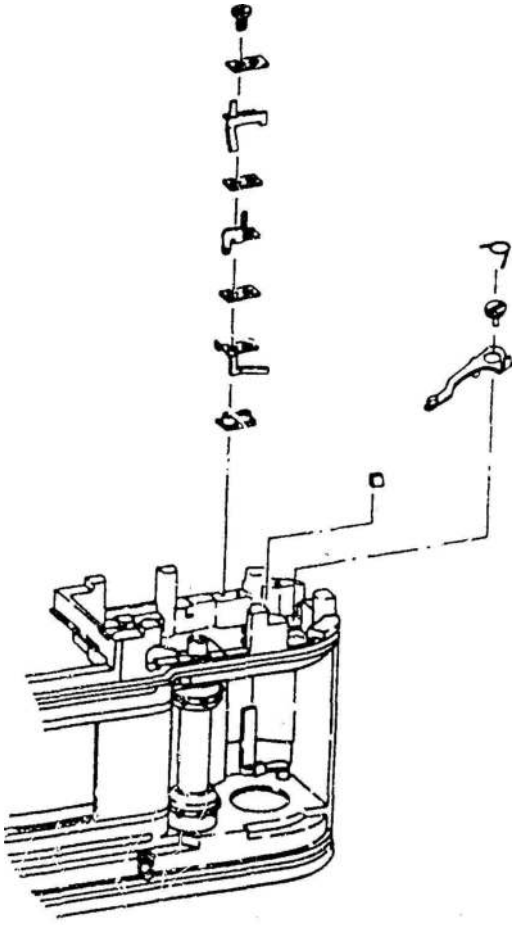
| | | | |
|---|---|---|---|
| Shutter button protrusion | : | 1.0±0.2mm (Std: Shutter Ring) | |
| Release Stroke | : | 1.4±0.2mm | |
| Total Stroke | : | 1.7±0.1mm | |
| Release pressure | : | Under 1,000 g | |

18.2 Electromagnetic Release

| | | | |
|---|---|---|---|
| SW 1 ON | : | 0.8+0.2mm | |
| SW 2 ON | : | 1.4±0.2mm | |
| SW 1 - SW 2 Separation | : | At least 0.5mm | |
| Total Stroke | : | 1.7±0.lmm | |
| SW 1 Pressure | : | 100±20 q | (except when R button |
| SW 2 Pressure | : | 350±50 g | set or at "B") |

**Adjustment Notes**

19. SW 18, X Sync Check and Adjustment



19.1 X Contact Check

When winding from the maximum curtain travel position (MCTP), the contact separation is 0.3mm when the brake claw is on the third ratchet tooth.

Also, when winding from the MCTP, the contact drive dowel must have at least 0.5mm total travel.

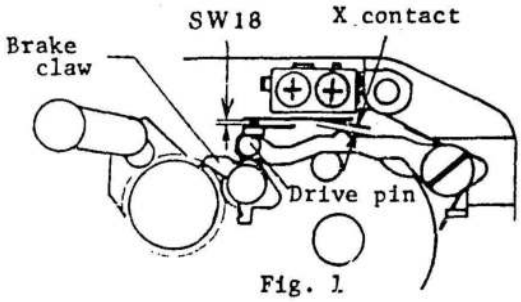



Fig. 1

19.2 SW 18 Check and Adjustment

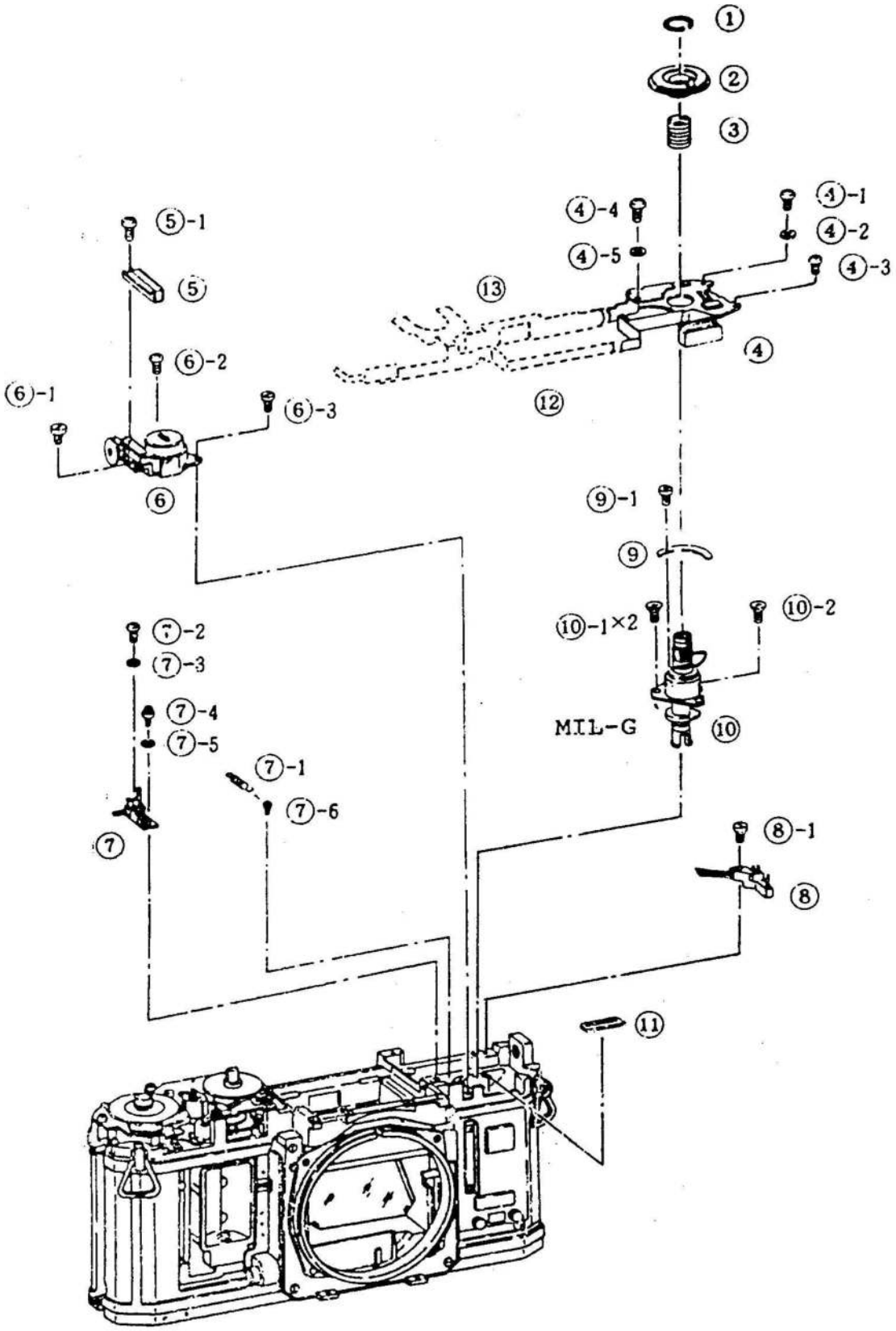
1) While winding slowly from the MCTP, adjust so that SW 18 turns on when the brake claw has traveled 2 to 2.5 teeth. Adjust by bending the fixed contact.

2) (Visual Check)

With the brake claw at the third tooth, check that there is at least 0.2mm separation between the drive pin and the switch lever.

3) Apply TUFFY TF-1156 to the marked areas in figure 1.

## 10. Upper body (rewind side)




Number 1-13

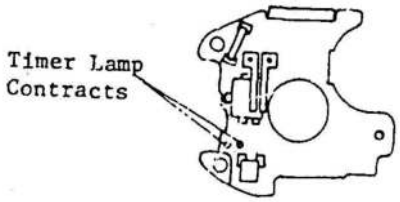
## Disassembly Notes

1. SV Circuit Board (S Board)*

1.1 If the SV circuit board need only be moved out of the way:

1) Remove three screws,

2) Raising the board slightly, unsolder the timer lamp contacts. (See dwg.)




By taking these steps, the SV board can be removed from the rewind shaft without disconnecting it from the main and exposure flexs.

1.2 To change the SV ckt. board, unsolder it from the main and exposure flex.

2. Meter Unit

2.1 Before removing the meter unit (6) fix the information pulley with a pin at one turn change.

2.2 Move the meter needle in the normal deflection direction and the AVO indicator (7) toward the penta-rail so the meter can be removed without the needle catching.

3. Exposure Flex (EXP FLX) *

The exposure flex cannot be removed without disconnecting the SV Ckt. board (4) and the meter/indicator unit (5) & (6) must be disconnected.

*: ( ) indicate abbreviations used on Electrical Diagrams.

## Assembly and Adjustment Note

1. SV Ckt. Board

1.1 SV contact height = 3-4mm

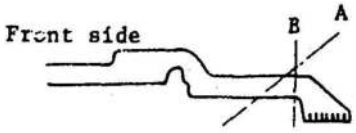
1.2 The SV brush (wiper) must move smoothly without catching.

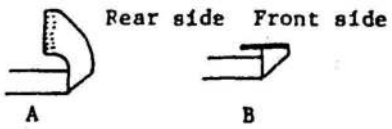
2. Put the opening in the C ring toward the front of the camera.

3. Before installing the SV ckt. board, clean the main ckt. board contact and apply electrolub.

4. Don't depress the rewind shaft (10) too far when the SV ckt. board is installed.

5. Using an installed flex as a guide, bend the main flex as shown.



**Assembly and Adjustment Notes**

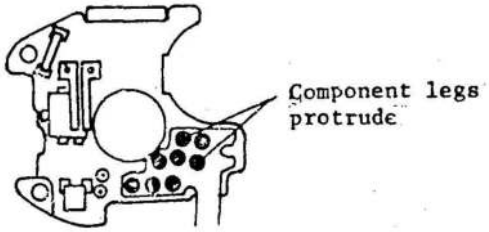
5.1 Make sure the connector legs are correctly aligned with the solder lands on the main ckt. board and then solder them together.

6. When installing the meter/indicator unit (5) + (6), make sure the meter needle clears the red mark on the AVC indicator (7).

7. Exposure Flex Installation

7.1 Before connecting the exposure flex to the meter indicator unit (5&6) or the SC ckt. board, put it through the body opening (Once attached, it will not fit).

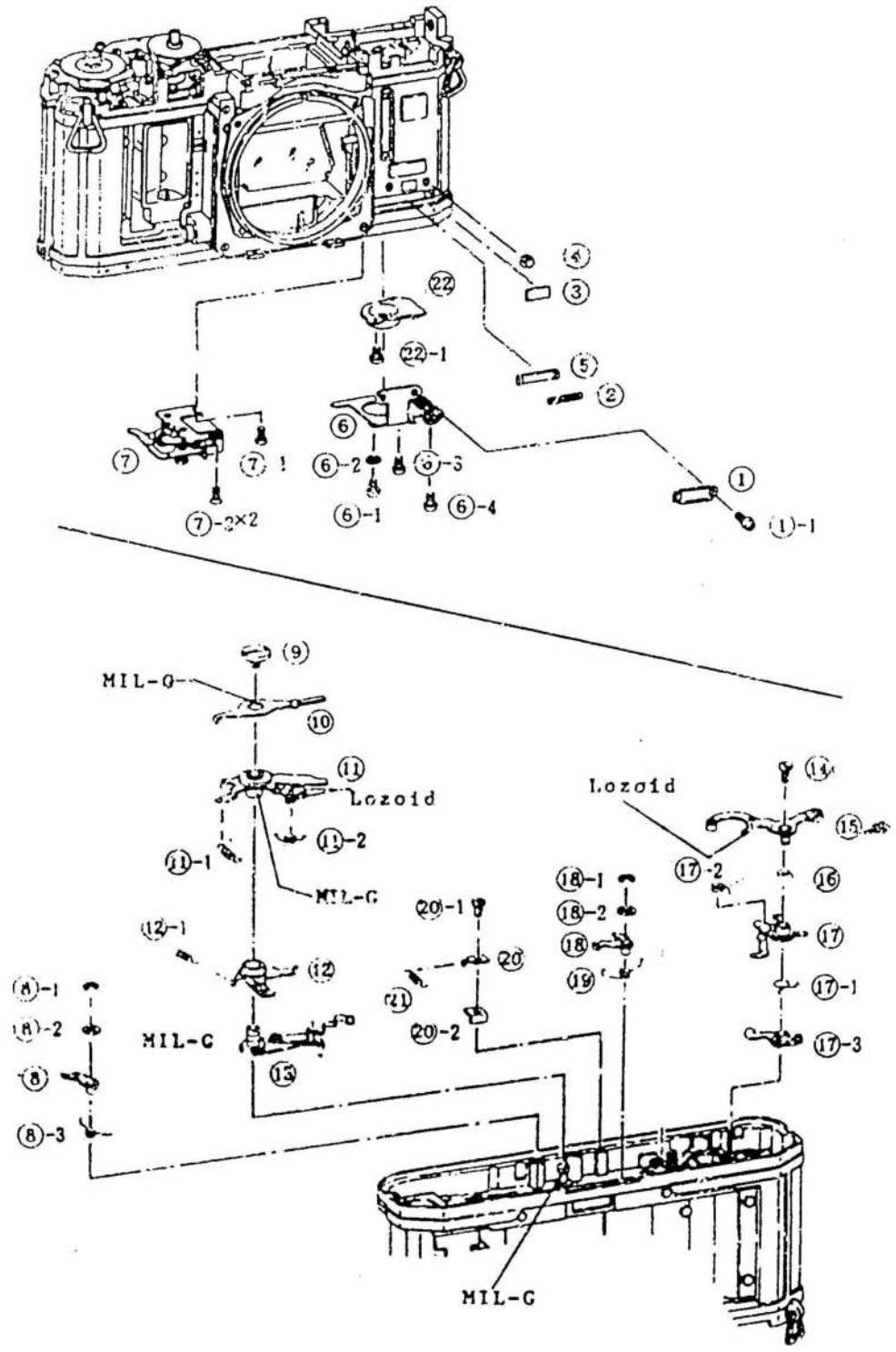
7.2 Apply flux to the marked areas and solder. Soldering time should be somewhat longer than normal.




8. Even when moved quite slowly, the AVO Indicator (7) should move smoothly.

Note: Numbers in parentheses in the text correspond to circled numbers on page 31. Disassemble in normal order and reassemble in reverse order.

## 11. Lower body (I)




Numbers 1-22

**Disassembly**

1. The mounting screw (7}-l for Mg2 is hidden under the lead solder connection.

2. Mg2 Lead is a single solid, lead. Take care not to kink the cable.

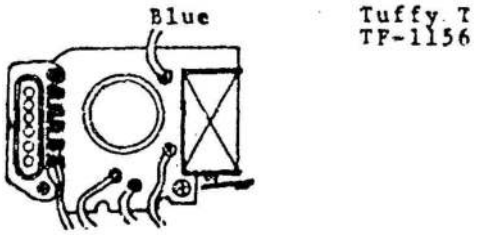
**Assembly and Adjustment Notes**

1. Lower body Flex

   Apply Tuffy TF-1156 to the MD Contacts on the lower flex as shown.

   1) MD contact Assembly (Back side)

   2) MD Contacts (Front side)

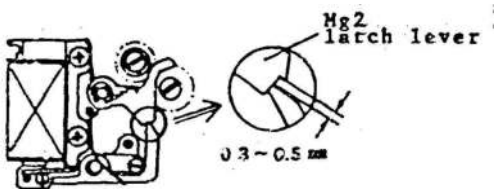



1.1 Don't forget washer (6)-2. 2.

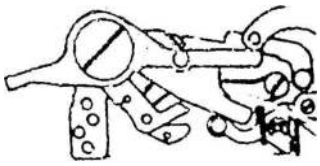
2. Mg2

2.1 The Mg2 latch lever should have 0.3 to 0.5mm overcharge

2.2 Adjust the overcharge by bending charge lever (10).



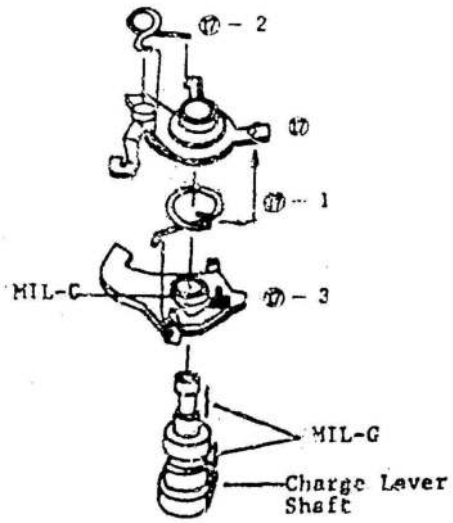

**Assembly and Adjustment Notes**



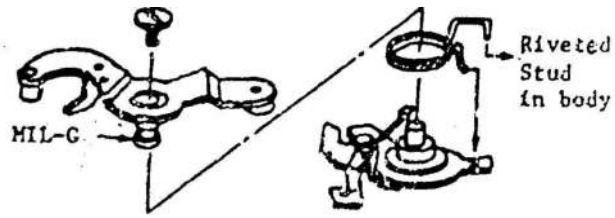
3. The shorter hook of the main diaphragm charge lever spring (11)-2 hooks at the diaphragm release drive lever (Matsuba lever) -which is part of the diaphragm charge lever (11).

4. Winding Stopper Levers

4.1 Assemble the stopper charge lever (17) and the winding stopper (16) and mount them on the shaft.




4.2 Onto them install spring (15) and charge lever (15).



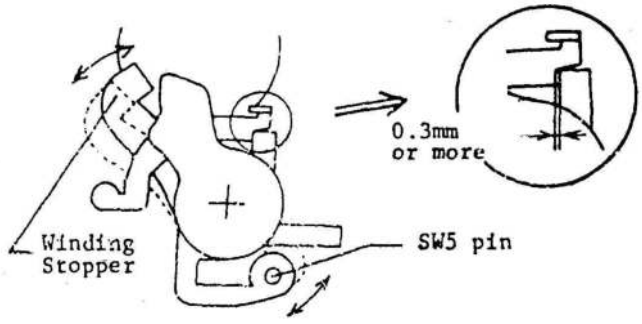

Note: Numbers in parentheses in the text correspond to circled numbers page 34.Disassemble in normal order and reassemble in reverse order.

**Assembly and Adjustment Notes**

4.3 Winding Stopper and Charge Lower Check

After installing (15) through (17) check the following points.

1) Winding Latch Overcharge: 0.3mm or more



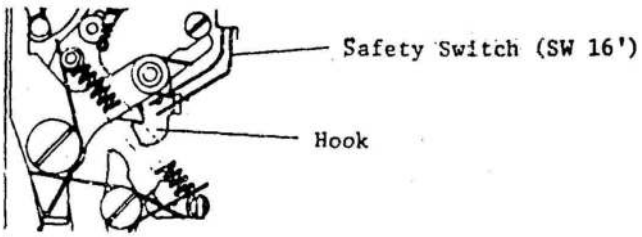

2) When the SW5 pin is moved, the stopper lever must move smoothly without catching.

Note: Numbers in parentheses in the text correspond to circled numbers on page 34.
Disassemble in normal order and reassemble in reverse order.

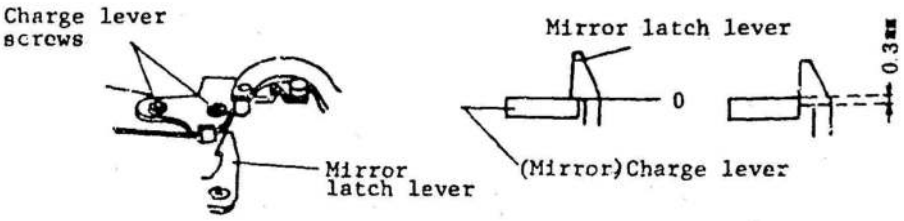
**Assembly and Adjustment Notes**

5. Mirror Charge Timing

5.1 Wind until the hook (see dwg.) on the mirror mechanism side of the front panel is set (The hook is easier to see if the battery box is removed).




5.2 In this condition check the position of the charge lever and the mirror latch lever. It should be as shown.



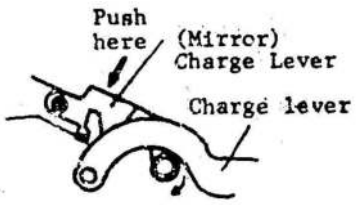

To adjust, loosed the lever screw and move the lever.

5.3 Post-Adjustment Checks

1) At maximum charge the separation between the two levers (above step) is 0.5mm or more.

2) At maximum charge, the mirror charge lever must have overtravel left (push as shown to check).

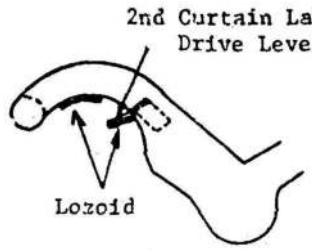
3) Stake the mirror charge lever screws with Aron Alpha.



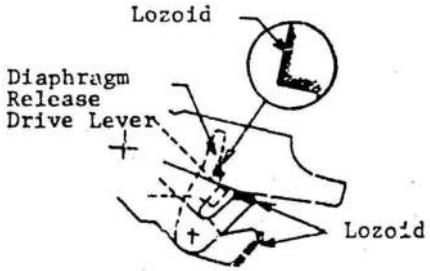
## 12. Lower body lubrication

Lozoid 72090 at //// points

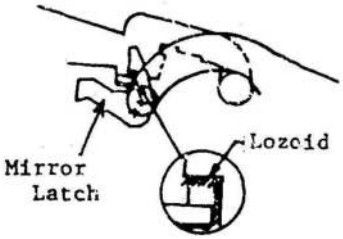
1)



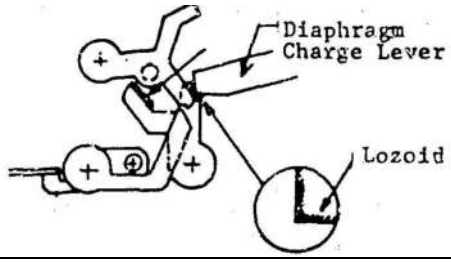

2)



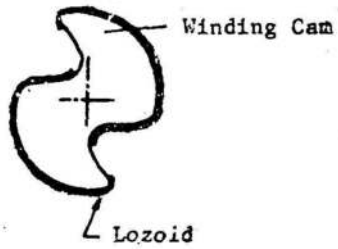

3)



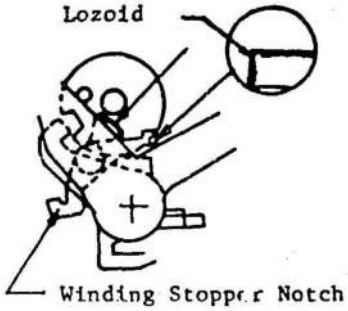

4)



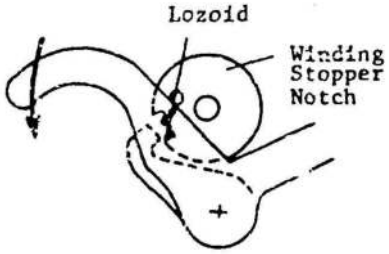

5)



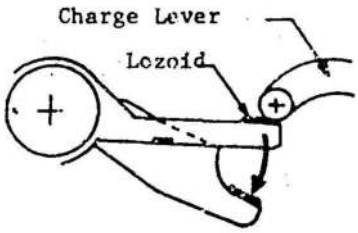

6)



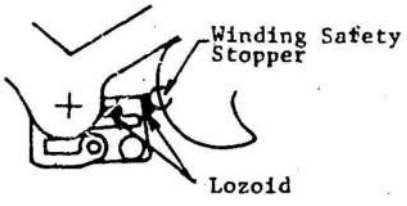

7)



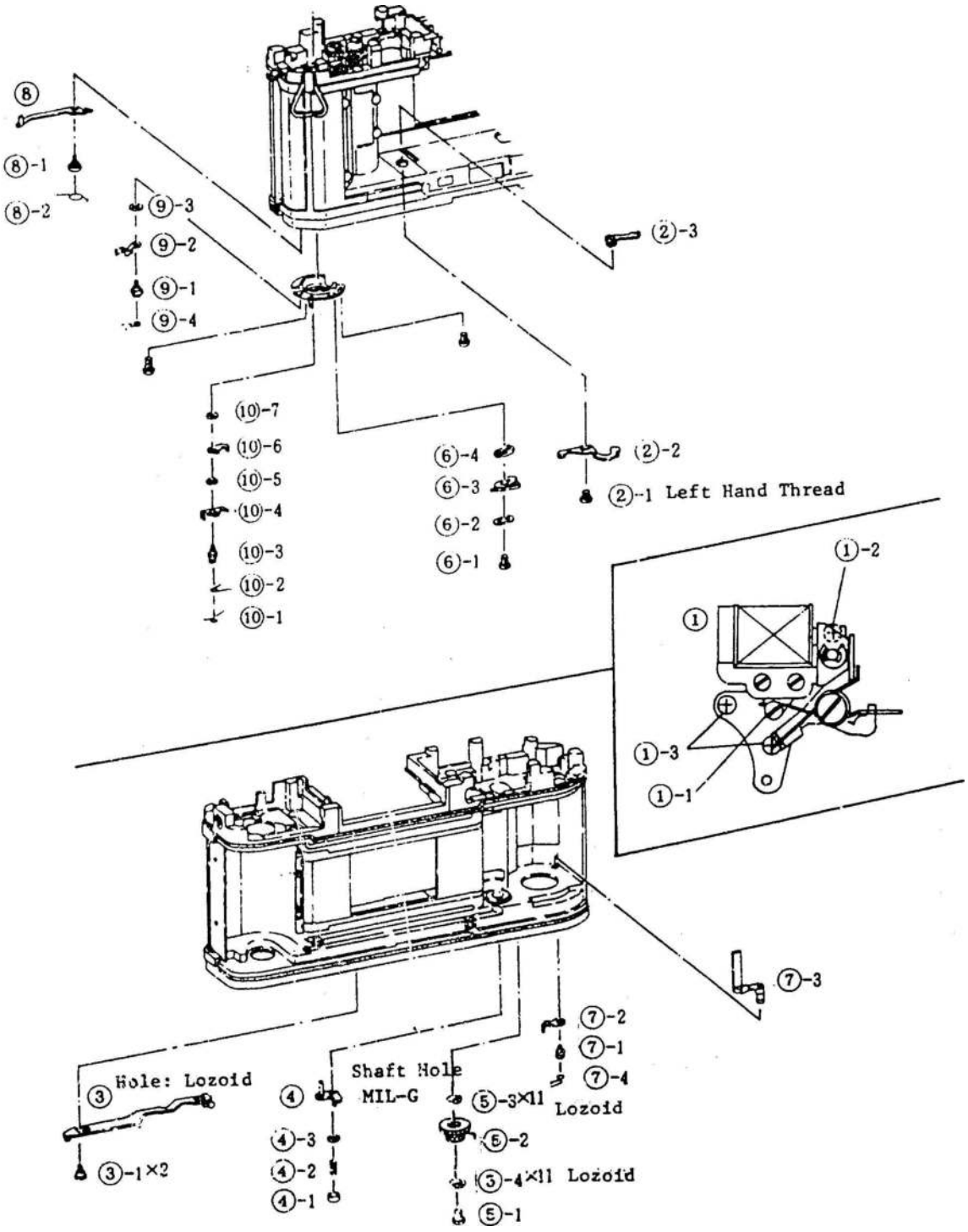

8)




9)



## 13. Lower body (II)




Numbers 1-10

5 - 10 can be assembled or disassembled independently

## Disassembly Notes

1. Mg3

1.1 To remove Mg3 (1), remove screw (1)-1. Open the armature and remove (l)-2 using a small cross-recess screwdriver. Remove one more screw (l)-3 and the magnet can be removed.

1.2 The armature is bonded to its base with silicone rubber.

1.3 Apply current (8mA) to close the the magnet. In this condition, run silicone KE 471RTV into the crack between the armature and armature lever, and let dry about 12 hours.

2. Signal Lever (2)-2's screw (2)-l has left-handed threads.

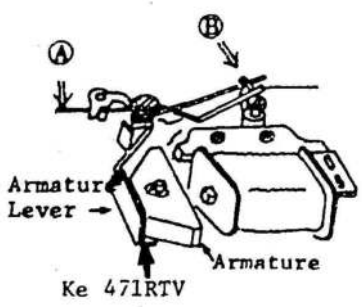
## Assembly and Adjustment Notes

1. Mg3 Holding Power Check

1.1 Unhook the spring.

1.2 Push at "A" until the dowel spacing is 0.1 to 0.2mm. The armature should set.

1.3 Apply 8mA current through the magnet coil and push with a tension page at "B". Read just before the armature releases.
Std: 280g or greater

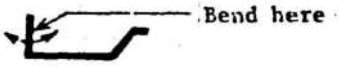



## Assembly and Adjustment Notes

1.4 When current flows through the coil the armature closes to the yoke.

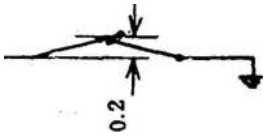
2. Rewind Switch (SW 17) Adjustment

2.1 Bend the lever at the point shown to meet the following two conditions.



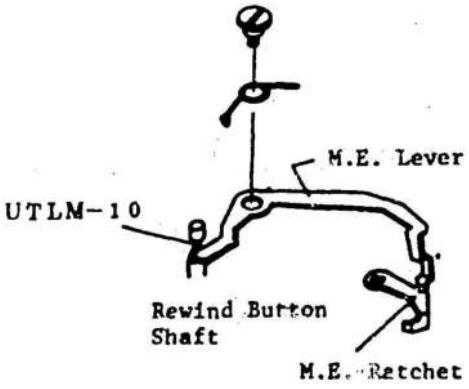

1) With at least one layer of film on the spool, there should be at least 0.2mm separation between the contacts. (Visual check)

2) With no film on the spool, the contacts should have at least 0.2mm of overtravel. (Visual check)




2.1 Check with a continuity checker.

3. To install the multi-exposure (M.E.) lever (9), hold the M.E. ratchet lever (9)-2 out of the way.




Note: Numbers in parentheses in the text correspond to circled numbers on page 39. Disassemble in normal order and reassemble in reverse order.

4. 2nd Curtain Latch Adjustment

4.1 Unsolder the data back direct contact and run keton (MEK) in around it.

4.2 Push the contact out from the inside.

4.3 Push on the armature lever and check the latch mesh. (Fig. 1)

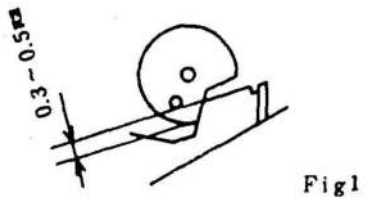



Fig1

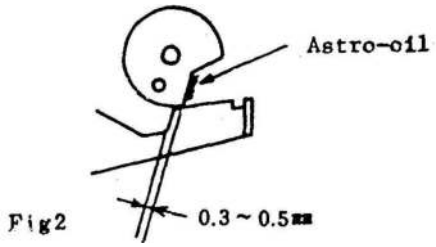



Fig2

4.4 Adjust the overlap to the limit shown in figure 2.

4.5 Stake the setscrews with Arontite R.

4.6 Apply Astro-oil to the latch surface.

5. 2nd Curtain Latch Operatic Check

5.1 In the wound condition the separation of the armature lever and drive lever is 0.2mm or more. (Fig. 3)

5.2 At all times during winding there must be some separation between the levers, and between the armature lever and spring hanger screw. (Fig. 4)

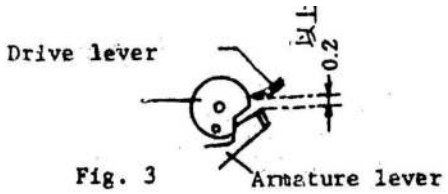



Fig. 3

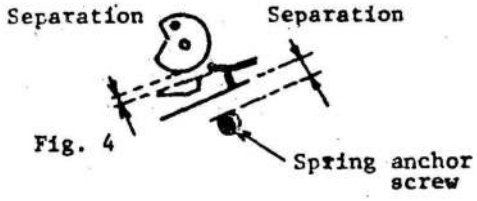



Fig. 4

5.3 If the above conditions are not met, bend the drive lever.

# 14. Electrical adjustments

Introduction and Contents

There are many electrical checks and adjustments for this camera, but they need not all be checked every time work is performed on the camera. The following table is a combined table of contents and guide to pertinent checks depending on the type of repair performed.

| Adjustment | Type of repair | | | |
|---|---|---|---|---|
| | Normal Adjustment | IC-1 Replaced | Main CKT Replaced | AV METER Replaced |
| 1. Offset | | Do | | |
| 2. R OSC2 (R43) | Check | Do | Do | |
| 3. R TC (R6) | | Do | | |
| 4. VR TV (VR3) | | | | |
| 5. V AVO Output | | | | |
| 6. SV (VR1) Output | | | | |
| 1. VR GAIN (VR2) | Do | Do | Do | |
| 8. VR AV LEVEL (VR7) | Dc | Do | Do | |
| 9. VR TV Level (VR6) | Do | Do | Do | |
| 10. B.C.,V AV Output | | | Check | |
| 11. EF Mode V AV Output | | | Check | |
| 12. VR MAV (VR5) Adj. | Do | Do | Do | |
| 13. R MTV2 (R15) Sel* | Check | Check | Check | |
| 14. R AE (R26) Sel. | Do | Do | Do | |
| 15. RT ADJ (R42) Sel. | Do | Do | Do | |
| 16. AV Meter Needle | | | | Do |
| 17. ASA Eccentric Adj. | Check | Check | Check | Check |

Notes: **Do** indicates a required step.

**Check** indicates an advisable step.
**Sel.*** Selection of a fixed resistor

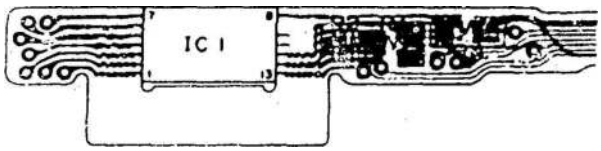
## Assembly and Adjustment Notes

1. Offset

1.1 Offset Voltage Check

1) Unsolder one end of the RTC resistor

2) Short pins 9 and 11 .




3) Measure the voltage from pin 10 to Gnd. (V1).

4) Measure the voltage from pin 11 to Gnd. (V2).

5) If Vl-V2= 0±lmV, adjustment is not necessary.

1.2 Offset Adjustment

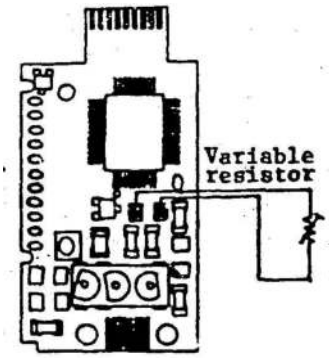
1) If difference is greater than lmV, adjust the offset.

2) Remove Rl or R2 and install a 200kohm variable resistor in its place.

3) Adjust the variable until the difference is less than 1mV.

4) Remove the variable and read its resistance.

5) Pick a fixed resistor closest to the variable resistors value and install it.




1.3 Offset Post-Adjustment Procedure

1) Remove the short between pins 9 and 11.

2) Resolder the resistor RT leg unsoldered in Step 1

2. R OSC2(R43)

2.1 Check

1) Set the camera to 1/2 sec. shutter speed.

2) Check the shutter speed. If it is within the range 490 to 510 mS (500ms±2%), no adjustment is necessary.

2.2 (R43) Adjustment

If the oscillator is not within limits, proceed as follows.

1) Remove the ROSC resistor and replace it temporarily with an approximately 200kohm variable resistor.

2) Adjust the variable resistor until the shutter speed is within limits. Remove the variable and measure it. Install a fixed resistor with a resistance as near as possible to the resistance of the variable.

3) Recheck with the new resistor installed.

3. R TC (R6) Adjustment

3.1 Set the power supply so V BAT is 5.0V.

3.2 Measure VC (1.3 50mV). The value of R TC is determined by the value of VC.

| VC(v) | RTC |
|---|---|
| 1.25-1.285 | 2.05kohm |
| 1.285-1.315 | 2.00kohm |
| 1.315-1.350 | 1.96kohm |

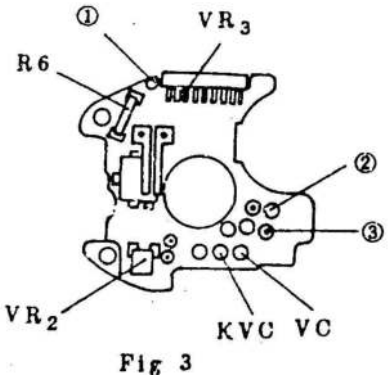


Fig 3

3.3 Install the correct value R TC (R6) on the SV ckt. board.

4. VR TV (VR 3) Output Check

4.1 Measure VC and KVC.

4.2 Set the shutter dial to."A". Check that the output voltage of VR 3 (Fig, 3) is equal to KVC.

4.3 Check VR 3 output at all shutter speed settings.
The correct value for each shutter speed is VC multiplied by the number listed below for each speed. The limit is 15mV for all speeds.

**Assembly and Adjustment Notes**

| Shutter speed | TVS | VR3 Output | Shutter speed | TVS | VR3 Output |
|---|---|---|---|---|---|
| 1/2000 | 11 | 1.3461*VC | ¼ | 2 | 0.6538*VC |
| 1/1000 | 10 | 1.2692*VC | ½ | 1 | 0.5769*VC |
| 1/500 | 9 | 1.1923*VC | 1″ | 0 | 0.5000*VC |
| 1/250 | 8 | 1.1153*VC | 2″ | -1 | 0.4230*VC |
| 1/125 | 7 | 1.0384*VC | 4″ | -2 | 0.3461*VC |
| 1/60 | 6 | 0.9615*VC | 8″ | -3 | 0.2692*VC |
| 1/30 | 5 | 0.8846*VC | R | | 0 |
| 1/15 | 4 | 0.8076*VC | B | | 0 |
| 1/8 | 3 | 0.7307*VC | | | |

5. V AVO Output Check (Checkpoint Fig. 3 #1)

5.1 Check the output at 1 (Fig. 3) for each maximum aperture pin height (AVO). It should be the produce of VC times the number listed below +/-4mV.

| AVO (f/No.) | | V AVO | AVO (f/No.) | V AVO |
|---|---|---|---|---|
| 0.5 | (1.2) | 1.225*VC | | |
| 1 | (1.4) | 1.250*VC | | |
| 2 | (2.0) | 1.300*VC | 1.7 (1.8) | 1.285 |
| 3 | (2.8) | 1.350*VC | 2.633 (2.5) | 1.332 |
| 4 | (4.0) | 1.400*VC | 3.6 (3.5) | 1.380 |
| 5 | (5.6) | 1.450*VC | 4.333 (4.5) | 1.4 17 |

5.2 Activate the stop-down slide. The V AVO value is the same as for AVO 5.

6. SV (ASA) Resistor (VR1) ASA 100 Positioning

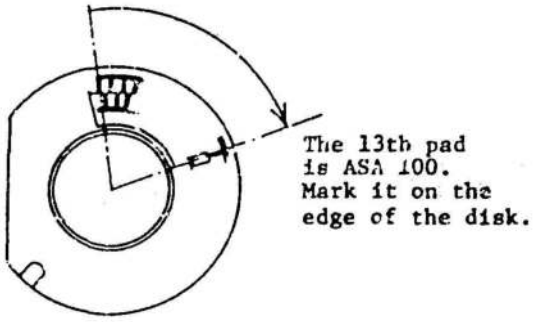
6.1 Turn the ASA resistor so that the output at #2 (Fig. 3) is 1.2VC. This is the ASA 100 position. If the position is not pre-marked, make a reference mark on the edge of the
resistor disk.

6.2 The VR SV positioning tool can be used to hold the resistor disk in position for other adjustments.

**Assembly and Adjustment Notes**

6.3 Reference

| ASA | |
|---|---|
| 6 | VC |
| 25 | 1.1 × VC |
| 400 | 1.3 × VC |
| 6400 | 1.5 × VC |




7. VR GAIN (VR 2) Adjustment

7.1 Mount the tool standard FD5C/1.4, standard focusing screen (PE) and pentaprism.

7.2 Check the output at #3 (Fig. 3) with the light source at EV 9 and EV 15 and record the values as V EV9 and V EV15.

7.3 Adjust VR 2 so that the difference between V EV9 and V EV15 is equal to VC/30x6 (±2mV)

$$(V_{EV9}) - (V_{EV15}) = \frac{VC}{30} \times 6 \pm 2\,mV$$

8. VR AV (VR 7) Level Adjustment

8.1 Set the shutter speed to 1/60 (TVS=6) and the light source to EV 12.

8.2 Measure the output at #1 (Fig. 4) and adjust VR 7 until the output (V AV) is equal to VC (±2mV). (This is V AV9.)

8.3 Set the shutter speed to 1/8 (TVS=3)

8.4 Measure the output at #1 again. It should equal 1.3333VC±19mV. (This is V AV9.)

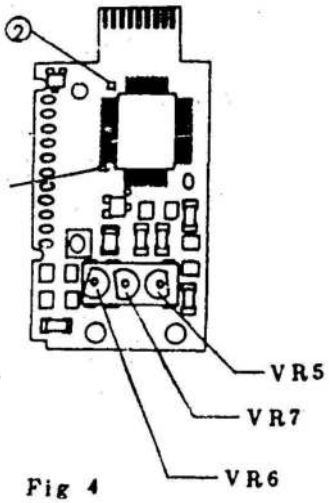


Fig 4

9. VR TV (VR 6) Level Adjustment

9.1 Set the aperture to f/5.6 (AVS=5), the shutter speed to "A" and the EV Tester light source to EV12.

9.2 Release the shutter and adjust VR6 so the exposure tester reads 0 ±.0.1 EV

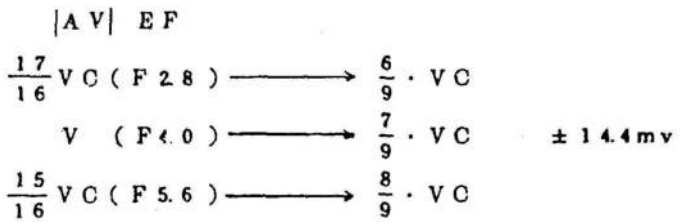
9.3 Another method is to check the voltage (V TV) at Fig. 4 #2.
It should be: V TV = 1.0433 (VC) * 5mV.

10. Battery Check Mode V AV Check

When E1 (measured at SV ckt. board) is 3.50V and the battery check is on, the output at #1 (Fig. 4) is 1.108 + 30mV.

11. EV Mode Fig. 4 #1 Output

With the dedicated flash inputs ( |AV|, EF ), the output at #1 (Fig. 4) should be as shown.




12. VR MAV (VR5) Adjustment

12.1 Set the shutter dial to 1/60 (TV=6).

12.2 Set the light source to EV 12 and adjust VR5 (Fig. 4) so the meter needle is at f/8±0.3f.

12.3 Reset the light source to EV 9. The meter should be at f/2.8 ± 0.3f. Reset the shutter to 1/250. The meter should now read f/1.4 ± 0.3f.

13. R MTV2 (JUS) Adjustment

13.1 Check the internal resistance of the ammeter ''A".

13.2 Add a dummy resistor to make the interval resistance + dummy resistor = 330ohm.

13.3 Set the shutter to "A" and the aperture to f/5.6 (AV5).

13.4 Set the light source to EV 12.

13.5 Install an approximately 500ohm variable resistor as shown and adjust for a current of 488.25 μA ±7μA.

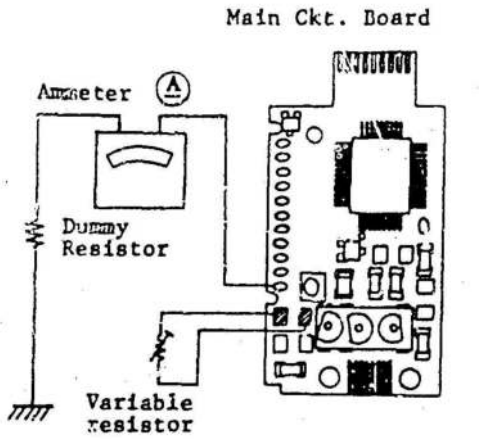
13.6 Remove the variable resistor. Measure its resistance and install the nearest available fixed resistor in its place.

13.7 EV 9 : 380.25μA ± 12μA.

13.8 EF Mode : 470.25μA ± 10μA.

13.9 Check the AE Finder Indication

| Light Source | Aperture |
|---|---|
| EV 12 | AV6 (f/8) TV 6 (1/6C) ± 0.4 |
| EV 9 | AV6 (f/8) TV 3 (1/8) ± 0.5 |



14. R AE Selection and Installation

14.1 Set the light source to LV 12.6 (819.6), the aperture to f/8 (AV 6) and shutter to 1/125 (TV 7).

Note: If light source cannot be set to 12.6, set the aperture to f/6.7 (AV 5.5) and the light source to LV 12.

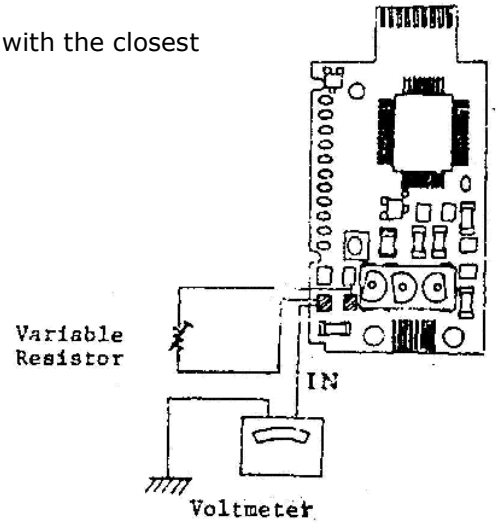
14.2 Install a 100kohm variable resistor.

14.3 Adjust the variable resistor so that the "IN" voltage is equal to VC ± 2mV.

14.4 Remove, read and replace the variable resistor with the closest available fixed resistor.

14.5 Check operation with the AE Motor Drive FN.

| | |
|---|---|
| Lens: "A" | Shutter: 1/125 |
| Light source | AVC (Lens Aperture) |
| EV15 | f/16 ± 0.3f |
| EV12 | f/5.6 ± 0.3f |
| EV9 | f/2.0 ± 0.3f |



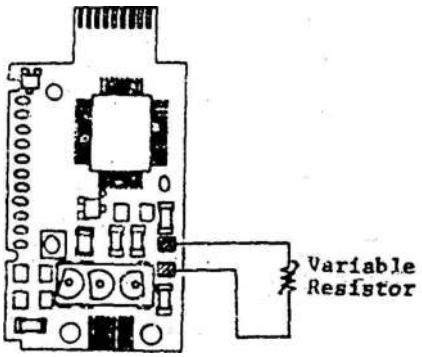

15. RT ADJ (R-S2) Selection

15.1 Set the shutter to "A".

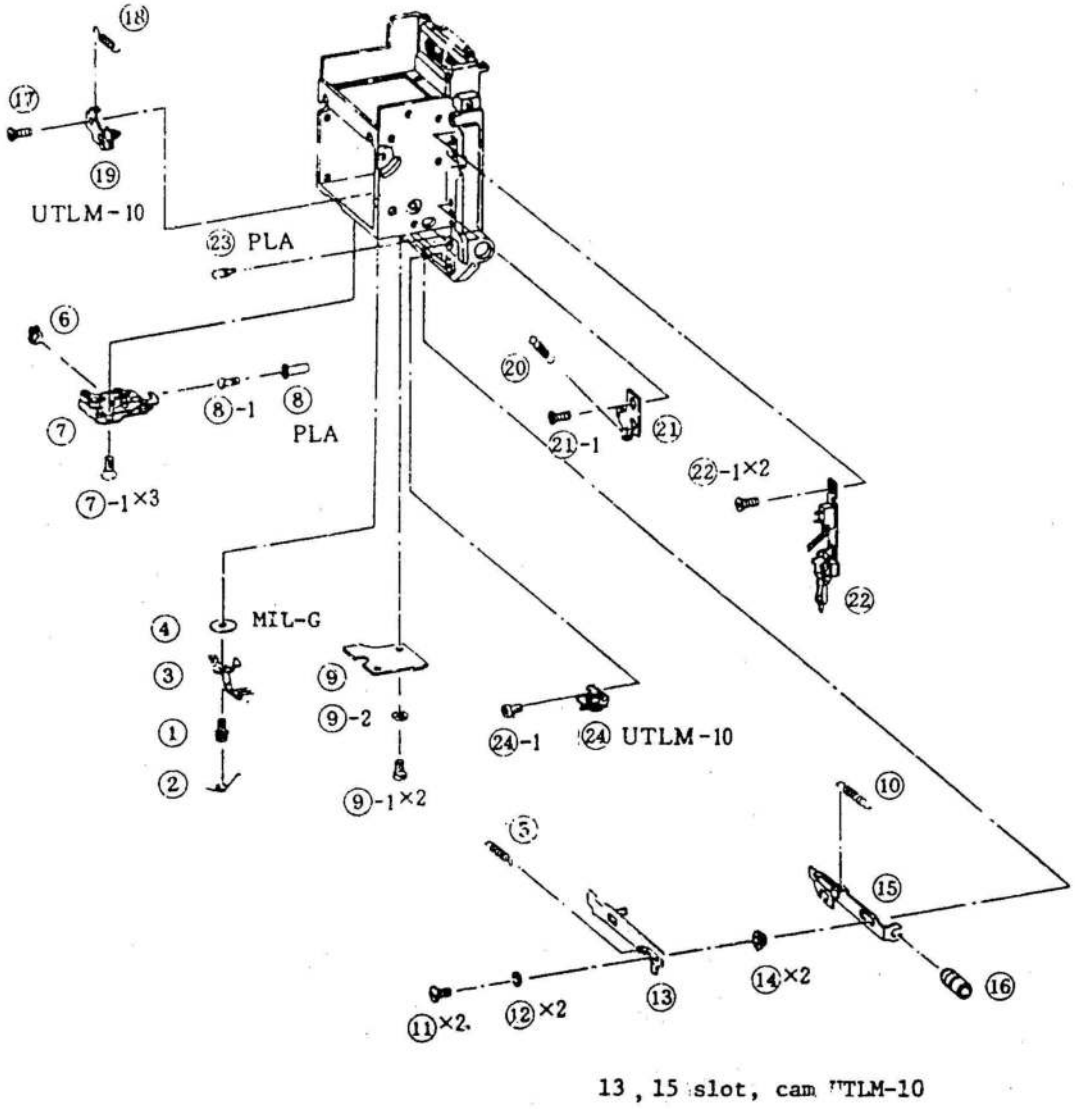
15.2 Install variable resistor as shown.

15.3 Adjust the resistor so the shutter speed is 0.9S±0.05mS (1/1000 sec.)

15.4 Install the closest fixed resistor to the variable resistor a value.



## 15. Front panel unit assembly and disassembly

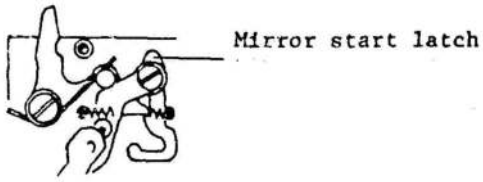



Numbers 1-24

## Disassembly Notes

1. Do not bend the brush contacts on VR AOAC (VR 9) wiper (3).

2. To remove the A Mode (switch) assy. (22), first remove spring holder (21), spring (20) and the mirror start latch (see dwg.).




## Assembly and Adjustment Notes

1. VR AOAC Lever

1.1 Check that both contacts of the VR AOAC (VR 9) wiper brush (3) are the same height and the brushes work smoothly without catching.

1.2 Lubricate the shaft hole of (3) and washer (4) with MIL-G.

1.3 Clean the pattern surface of VR AOAC resistor board (9).

1.4 Check that the VR AOAC wiper (3) operates smoothly even when the maximum aperture correction pin (8) is moved slowly.

2. Maximum Aperture Correction Pin (8)

2.1 Lubricate the max. aperture correction pin (8) and the hole it works in with a small amount of FLA (not enough to come out of the hole).

## Assembly and Adjustment Notes

2.2 Check that the height of the pin in the relaxed position is 5.7± 0.05mm below the mount surface.

2.3 The pin (8) must work smoothly.

3. G Ring (6)

3.1 Install G ring (6) in the direction shown and insure that it is completely seated.

3.2 After installing the G ring (6). Check that the following needle holder works smoothly.

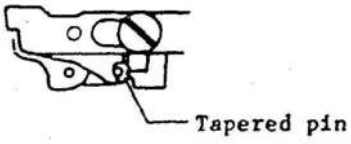
4. Do not forget the mylar washers (9)-2 when installing the VR AOAC board (9).

5. Diaphragm Closing Slide (15)

5.1 Do not forget collar (12) when assembling slides (15) and (13) with screw (11).

5.2 Lubricate the slide (15) and A Mode slide (13) friction surfaces with UTLM-10.

5.3 When installing the slide (15), make sure that the tapered pin on stop-down lock lever (19) fits as shown below.

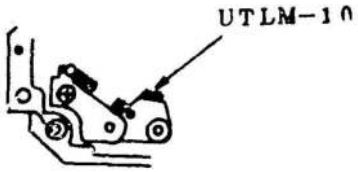



Note: Numbers in parentheses in the text correspond to circled numbers on page 50. Disassemble in normal order and reassemble in reverse order.

5.4 Attach spring (10) to hooks of (15) and (21) and spring (5) to hooks of (13) and (7).

5.5 Check that the stop-down slide operates normally.

6. Lubricate the cam surface of the stop-down lock lever with UTLM-10.




7. Lubricate the A-M pin (23) with FLA.

8. A-M Changeover

8.1 Check the A-M pin after installing the A Mode Assy. (22).

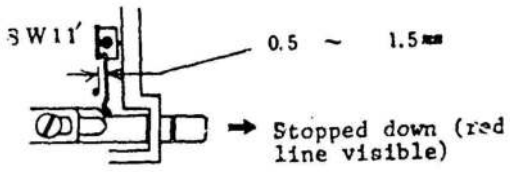
1) A-M pin height (Std: Mount surface) : 0  0.05mm.

2) A-M pin returns smoothly and positively.

3) A-M switch is on when A-M pin is 0.4 to 0.6mm below mount surface.

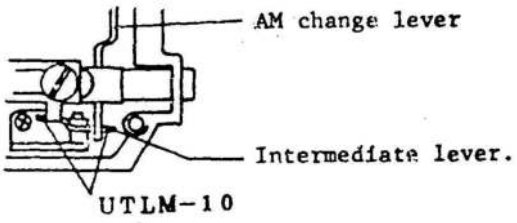
8.2 With the lens on "A" the lock pin of (19) must not release.

8.3 Check that SW II' is on when the stop-down slide is in the normal position and off when the slide is extended.

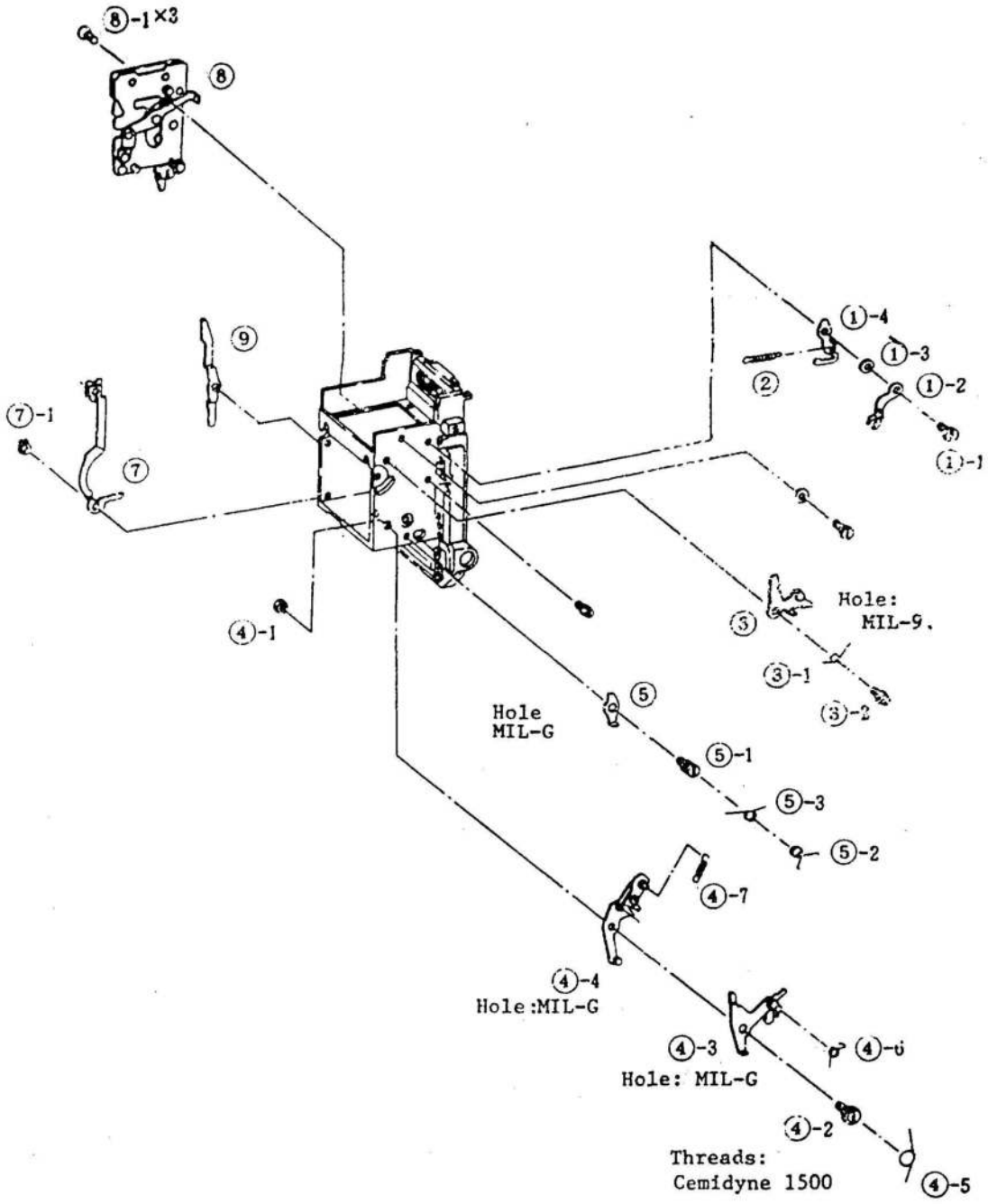



8.4 When installing the A Mode Assy. (22), the A-M change lever should be over the intermediate lever (18).

9. Lubricate the friction surfaces of intermediate lever (24) with UTLM-10.




Note: Numbers in parentheses in the text correspond to circled numbers on page 50. Disassemble in normal order and reassemble in reverse order.

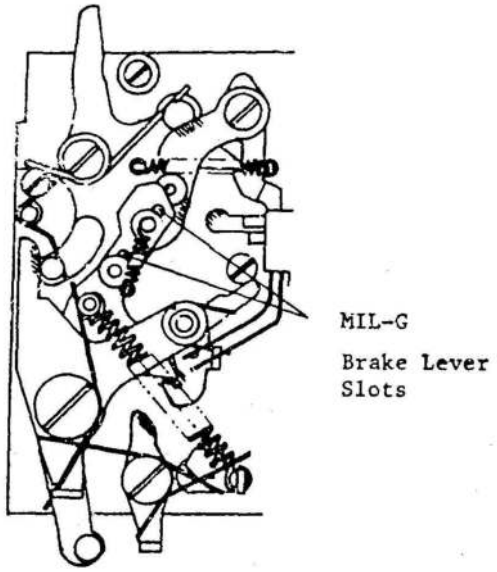

⑧-1×3
⑧
⑨
⑦-1
⑦
①-4
①-3
①-2
①-1
②
④-1
③
Hole:
MIL-9.
③-1
③-2
Hole
MIL-G
⑤
⑤-1
⑤-3
⑤-2
④-7
④-4
Hole:MIL-G
④-3
④-6
Hole: MIL-G
④-2
Threads:
Cemidyne 1500
④-5

Numbers 1-9

**Assembly and Adjustment Notes**

1. Lubricate all lever pivot shafts with MIL-G.

2. Lubricate the friction surfaces (///// marks) with Lozoid 72090. Lubricate the slots of the brake lever [p/o the mirror charge lever (4)-4] with MIL-G.

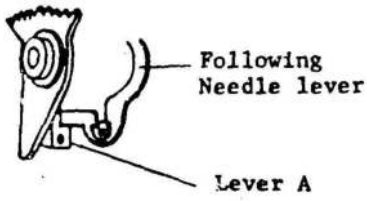



3. Check the positions of all the springs (see above).

4. Following needle lever

4.1 Slip the end of the following needle lever (7) under the resistor section of AE unit.

4.2 The bottom end of lever (7) should be engaged with the lowest part of lever A and shown below.

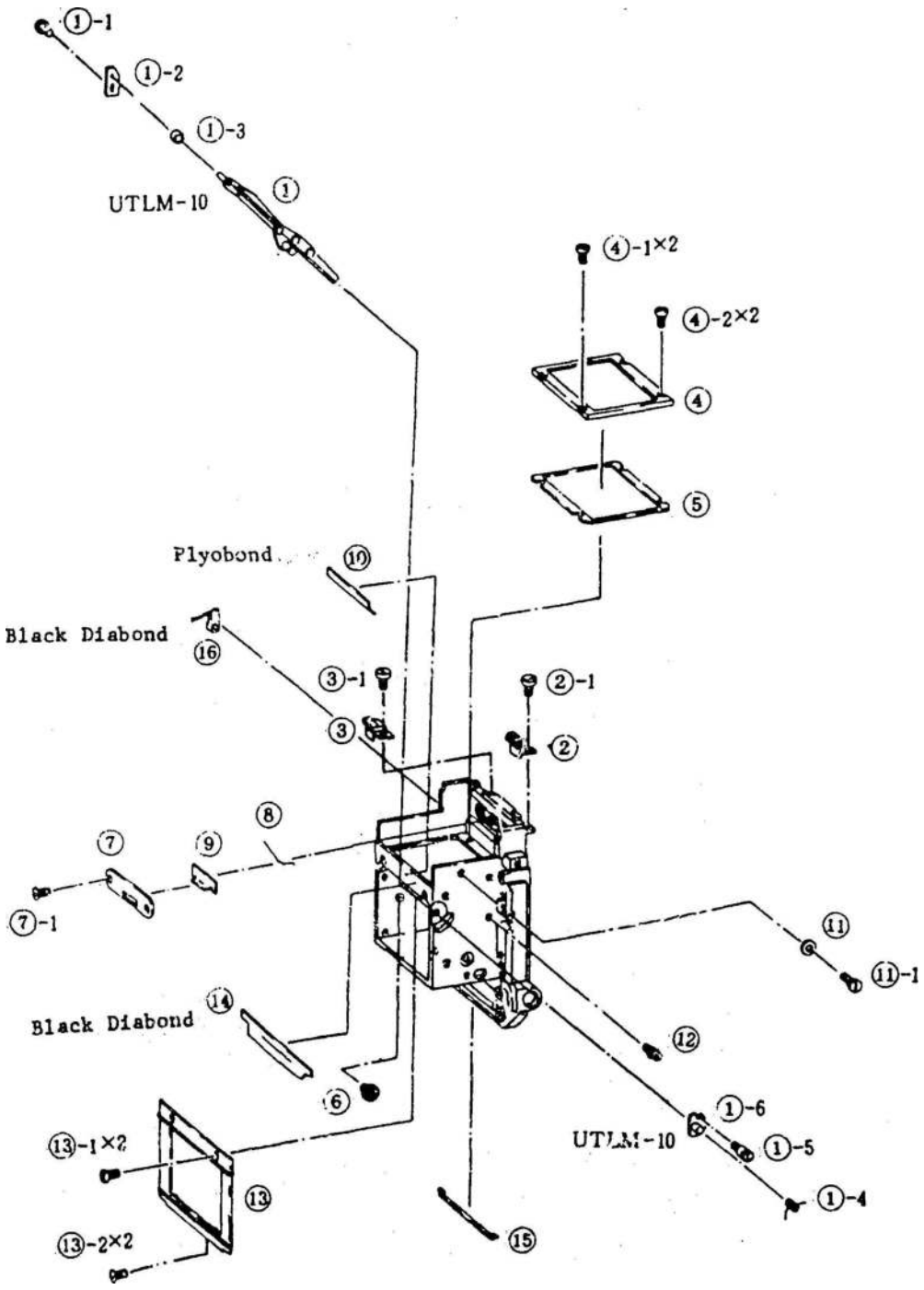



4.3 The aperture signal lever should work smoothly with no trace of roughness.

4.4 Lever (7) must also work smoothly when the stop-down slide is activated.

4.5 When the max. aperture correction pin is moved the correction lever (9) must work smoothly.

Note: Numbers in parentheses in the text correspond to circled numbers on page 53. Disassemble in normal order and reassemble in reverse order.


①-1
①-2
①-3
UTLM-10
①
④-1×2
④-2×2
④
⑤
Plyobond
⑩
Black Diabond
⑯
③-1
③
②-1
②
⑧
⑦
⑨
⑦-1
⑪
⑪-1
Black Diabond
⑭
⑫
⑥
①-6
UTLM-10
①-5
①-4
⑬-1×2
⑬
⑬-2×2
⑮

Numbers 1-13

1. Mirror

1.1 Lubricate the mirror hinge with UTLM-10.

1.2 Mirror (1) thrust play should be between 0.05 to 0.25mm. Adjust collar (1)-3.

1.3 Mirror (1) must move smoothly under its own weight.

2. Pentaprism Contacts

2.1 Soldering time to the pentaprism contacts (2) and (3) should be kept as short as possible to avoid loosening of the contacts in their plastic seats. (Placing the contacts on a damp sponge while soldering is one possible method.)

2.2 The left and right contacts are different. Take care not to reverse them. When viewed from the mount (front) side, the contact with the recessed (X sync) pin goes on the left.

3. The upper left and lower right screws (4)-l holding the focusing screen mask (4) are positioning screws.

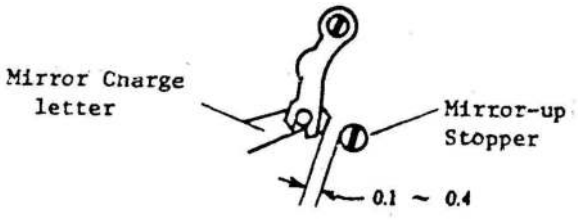
4. Mirror Shock Absorber (6)

4.1 The clearance between the mirror (1) and the shock absorber (6) should be 0.1 to 0.4mm (after the mirror angle has been adjusted). The absorber (6) is available is several sizes to make the adjustment.

4.2 Align the light shield ridges on the shock absorber (6) with those on the inside of the front panel.

5. Install the rubberized fabric light shield (10) with the rubberized side forward (toward the mount), put it flush at the top and adjust horizontally as it is installed. Use plyobond.

6. With the mirror in the full-up position against the light shield, the clearance between the mirror charge lever and the mirror-up stopper is 0.1 to 0.4mm. If it is out of tolerance, change to a different sized mirror-up stopper (12).

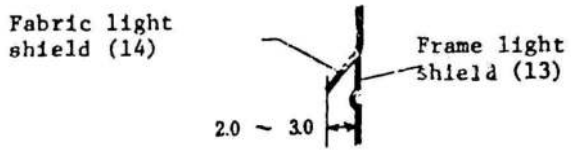



Note: Numbers in parentheses in the text correspond to circled numbers on page 55. Disassemble in normal order and reassemble in reverse order.

7. Light Shields

7.1 Both light shields (10) and (14) have heat-sealed edges to prevent fraying,

7.2 Light shield (14) should stand away from the frame light shield (13) by 2 to 3 mm. Heat it with a soldering iron to shape it correctly.



## Assembly and Adjustment Notes

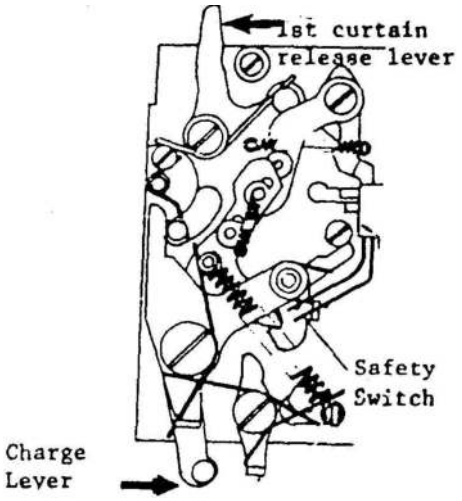
1 1st Curtain Release (Mirror Release)

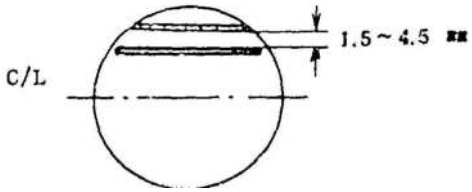
1.1 Move the mirror charge lever in the direction shown at the right.

1.2 Move the lever until the mirror is at mid-position, then set the 1st curtain release lever as shown.

1.3 Slowly return the mirror charge lever and note the position of the mirror when the 1st curtain release releases.

1.4 The correct position for the 1st curtain release lever to release is when the mirror is 1.5 to 4.5mm below the light shield at the top of the mirror box.



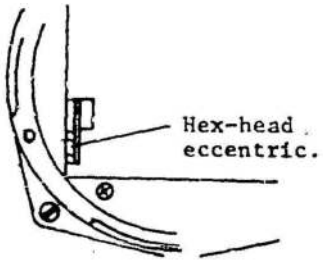

2 Safety Switch

The safety switch must make (turn on) when the edge of the mirror is at the optical axis. The limits are from 1mm below to 10mm above the optical axis.

3 Mirror Angle (45°) Adjustment¨

3.1 Horizontal Level Adjustment Limit ±3'

3.2 Angle Adjustment: 45°±3'. Adjust with the hex-head eccentric.




3.3 After the adjustment is correct, apply Aron Alpha 802*to the hex-head eccentric. Do not apply to other parts.

*: Aron Alpha 80 2 is thicker than the regular Aron Alpha

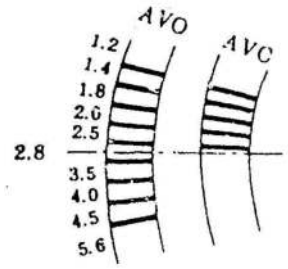
4. VR AOAC (VR9) Wiper Adjustment

4.1 In the relaxed position (AVO=5.6) the pin height* should be 5.7 ± 0.05mm.

*: Pin height is repair jargon. In the case of lenses, it is correct, since the pin protrusion above the standard mount surface if measured. In the body, the opposite is true. The pin height is a measure of how much the pin is recessed below the mount standard surface.

4.2 Set the max. aperture pin to the f/2.8 height. Check that the AVO and AVC brushes are on the proper pattern (A loupe will probably be necessary). Adjust with eccentric A.

4.3 Check the brush position also at AVO S f/1.2 and f/5.6.



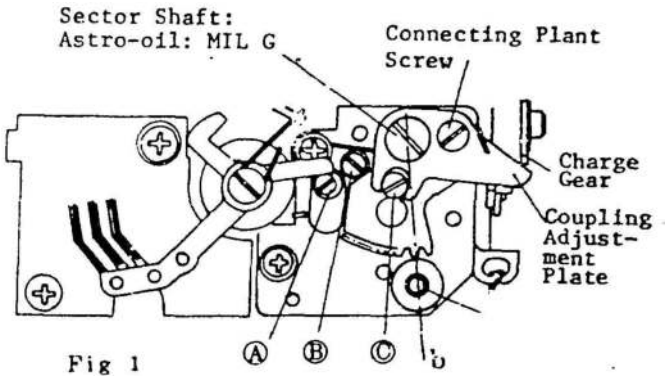




Fig 1

5. Sector Gear Return Position Adjustment

Adjust eccentric (B) so that a line through the axes of the sector gear and coupler (line "b") bisects the second tooth of the sector gear.

6. R AV Wiper Position Adjustment

6.1 Stop down the tool-standard lens 4 AV (f/5.6) and adjust so the inner edge of the wiper (Fig. 3) is on the AV=4 position of the AV resistor board (Fig. 2). The adjustment is made by loosening the viper mounting screw and repositioning the wiper.

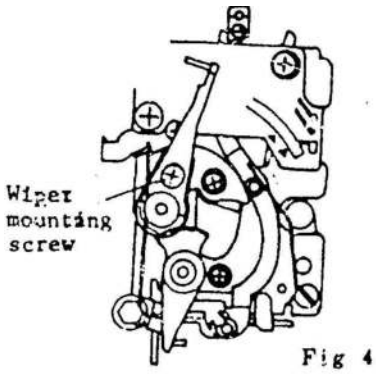



Fig 4

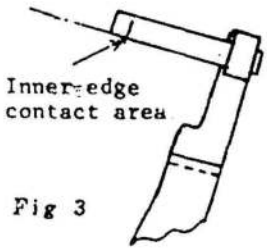



Fig 3

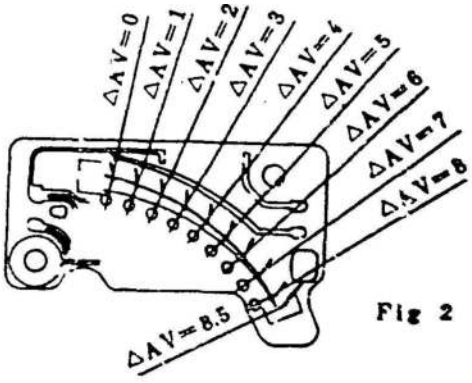



Fig 2

6.2 Check the brush position also at AV=0, AV=4 and AV=8 also. The limit is ±0.2 AV. (each pattern element is 0.1AV).

Note: Some R AV boards have circular marks indicating full step intervals and others have triangular marks.

6.3 After the adjustment is finished, stake the mounting screw with diabond.

7. Coupling Adjustment Plate Adjustment

7.1 Set the tool standard lens to "A".

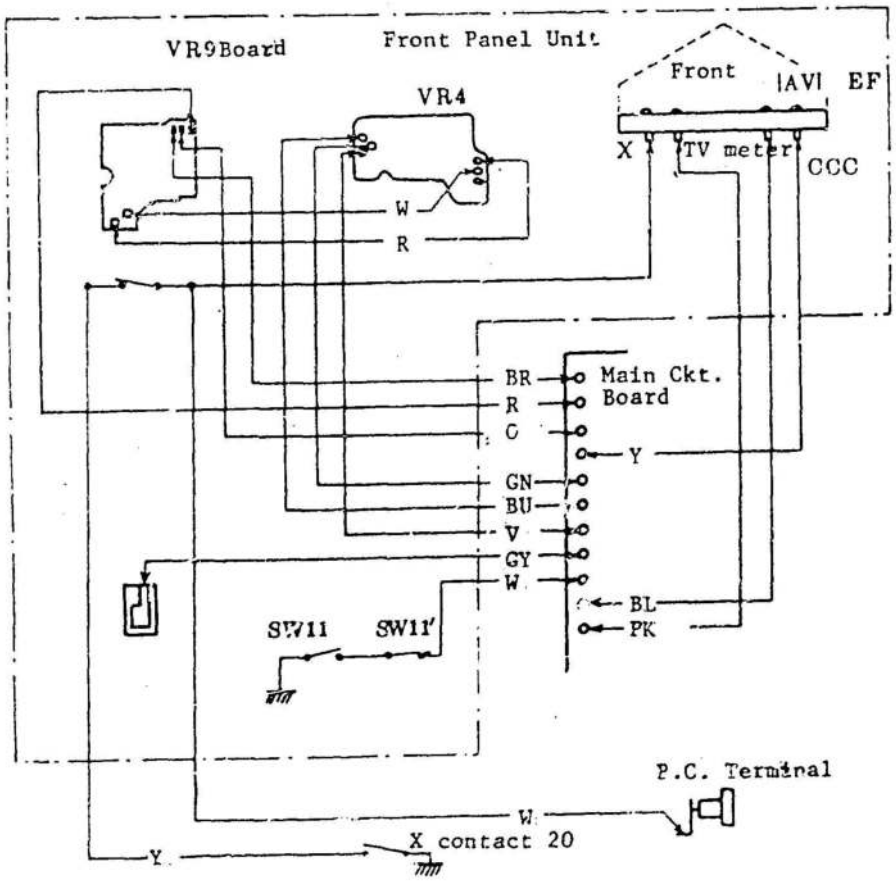
7.2 Loosen the coupling lever screw.

7.3 Adjust the eccentric (C) (Fig. 1) so that there is no space between the charge gear and coupling lever.

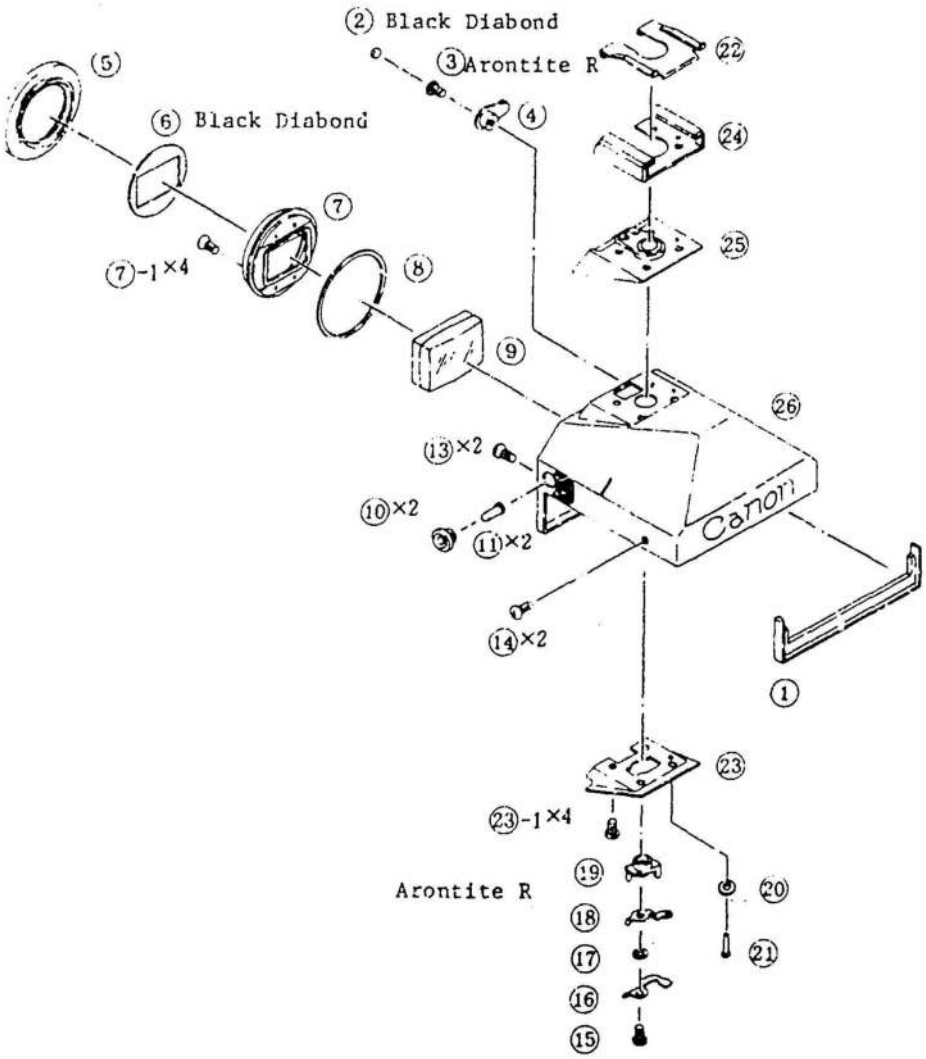
7.4 After adjustment stake both the eccentric (C) and coupling lever screw with diabond.

7.5 Lubricate the friction surfaces of the charge gear and coupling lever with UTLM-10.

8. Front Panel Unit Wiring Diagram



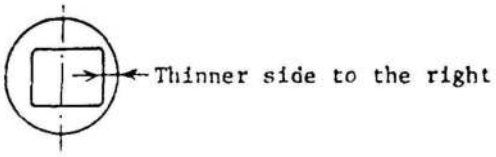
## 16. Eye level finder




Numbers 1-26

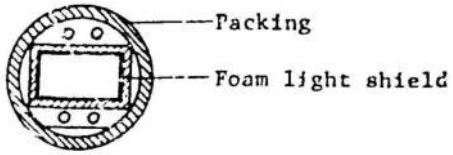
## Assembly and Adjustment Notes

1. The thinner side of the eyepiece mask (6) goes to the right.



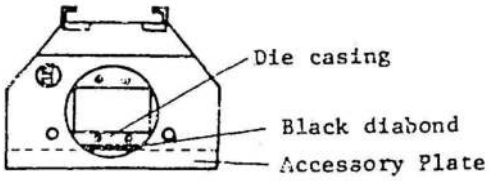

2. Eyepiece Frame (7)

2.1 The plastic foam light shield in eyepiece frame (7) should not be visible.

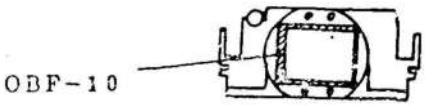



2.2 The notch in the frame goes down.

3. Full the space between the accessory cover (1) and the diecast pentaprism box with black diabond.




4. Apply oil retardant OBF-10 around the junction of the die casting and eyepiece lens. (Water resistance)




5. Use the special tool to install the Button ring (10),

6. Pentaprism Cover Installation

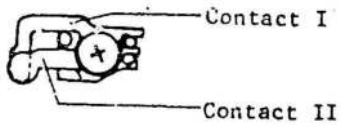
6.1 Install the cover from the front first.

6.2 When covering rear (eyepiece) side keep the cover level as it is lowered into place.

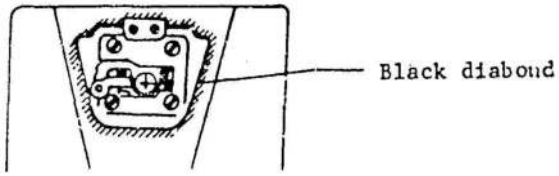
Note: Numbers in parentheses in the text correspond to circled nurnbers on page 61.
Disassemble in normal order and reassemble in reverse order.

**Assembly and Adjustment Notes**

7. Assemble the contacts (16) and (18) so contact I (18) is under contact II (18).



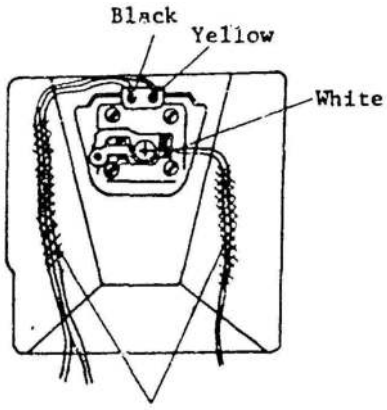

8. After installing the accessory shoe mounting plate (23), apply black diabond all around the joint with the prism cover so no crack is left open. (Water resistance)



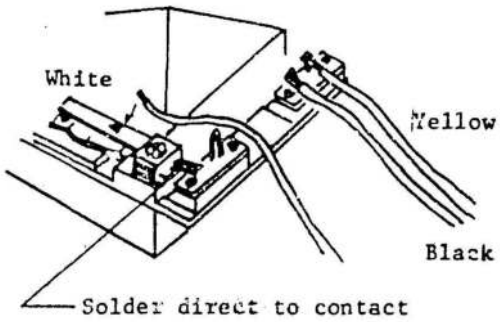

9. Pentaprism Cover, Lead Dress

9.1 Solder the black and yellow leads as quickly as possible to prevent loosening of the contacts in their plastic mounts (the contact assembly can be placed on a damp sponge).

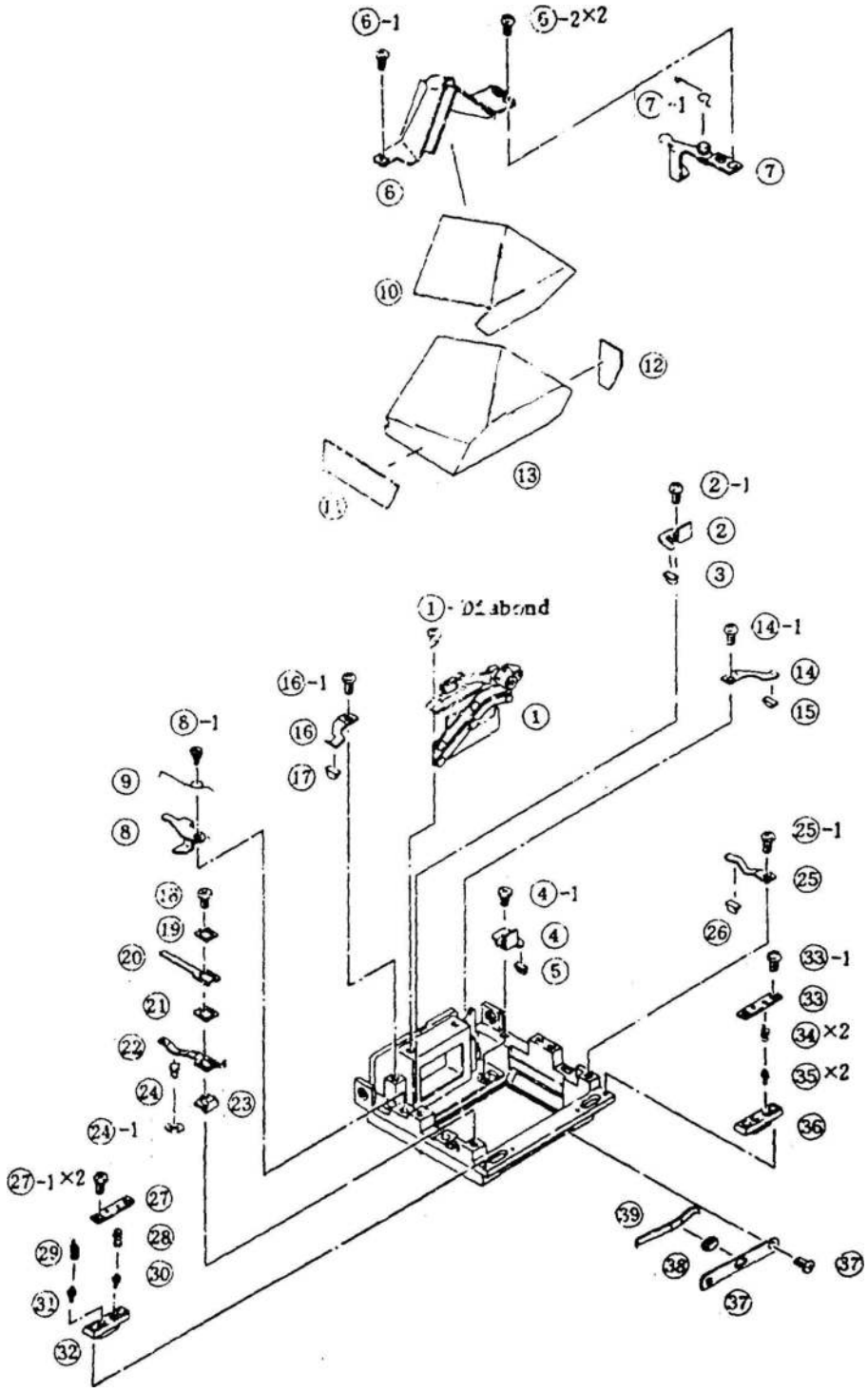
9.2 Solder the leads and dress as shown.




Fix leads to inside on cover with black diabond.



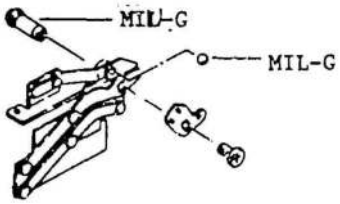

Note: Numbers in parentheses in the text correspond to circled numbers on page 61.
Disassemble in normal order and reassemble in reverse order.



Numbers 1-39

## Assembly and Adjustment Notes

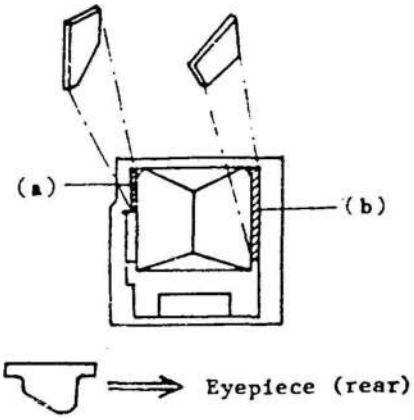
1. The eyepiece shutter is assembled as shown.




2. Pentaprism Play Removal

2.1 Select the correct spacer (a) for the left side.

2.2 Select the correct spacer (b) for the right side. (Both spacers are available in several sizes.)




2.3 Bond the spacers in place with black diabond.

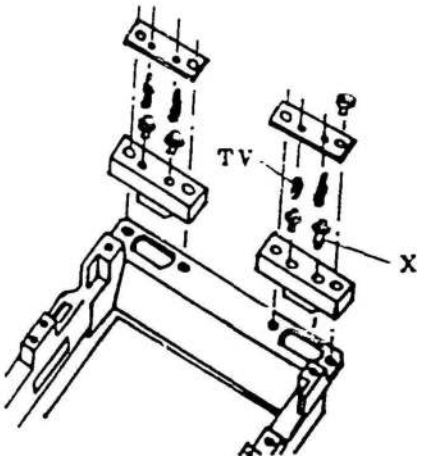
3. The rail pressure pins (15), (17) and (26) have to be installed in the correct direction.

4. Contact Pressure Springs

   1) The springs must be used in the correct positions.

   2) The X contact spring is approximately 0.5mm longer than the others.

   3) The TV contact spring (second from the right) has a flush end.



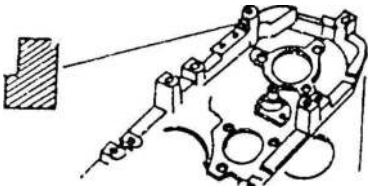

   4) 4.2 Align the contact assemblies so they do not extend over the edge of the pentaprism box and tighten the mounting screws.

Note: Numbers in parentheses in the text correspond to circled numbers on page 64. Disassemble in normal order and reassemble in reverse order.

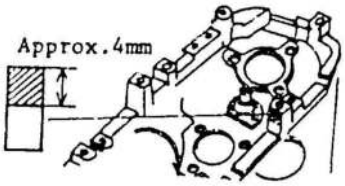
## 17. Moisture Resistant Treatment

Apply moisture-proofing (Tuffy TF-1156) at the points indicated by hatching.

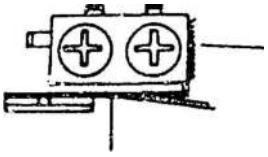
1. On the body at the SW 18 mounting position.



2. On the body at the SW 12 mounting position.




3. SW 18 assembly

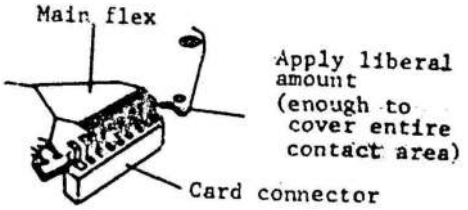


(To the contact base)

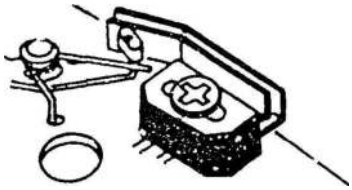
4. Timer lamp contact assy.

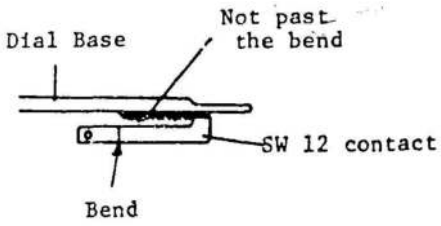
Cover completely

5. Main flex./ SV Connector

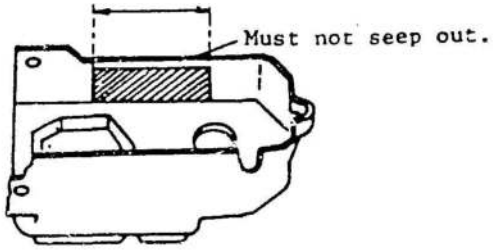



6. Pentaprism Contacts (X contact)

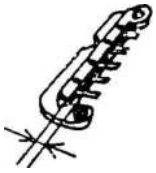




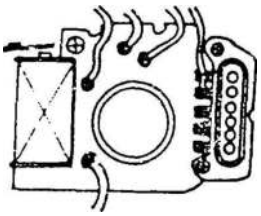

7. Top Cover (Right) Approx. 30mm



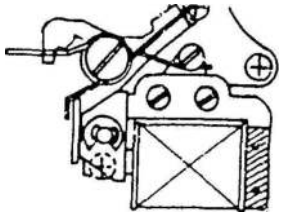

8. MD contact (back side)



9. MD Contact (Front side)

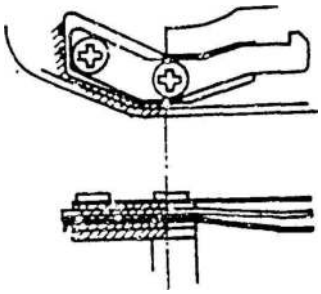


10. MG 3 Lead connections

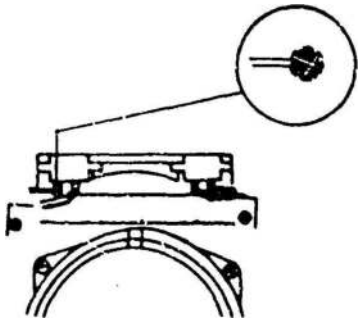


11. Main flex front side soldering

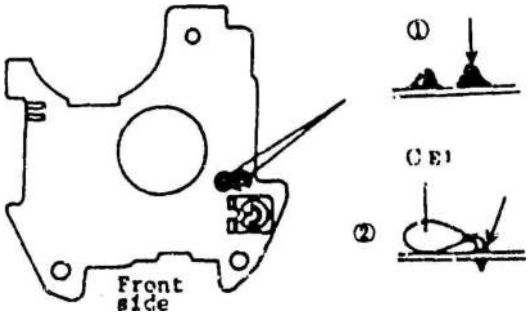
12. SW 1



13. Pentaprism Contacts (X contacts)

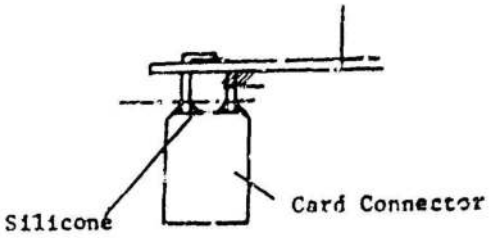


14. Capasitor CE1 (SV Board)



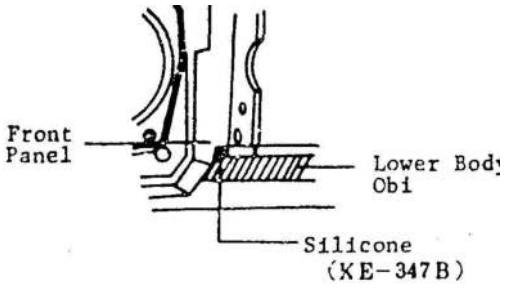

(1) Soldering points on front of board.
(2) Rear Side: Capacitor leg and hole - Liberal amount

15. Card Connector (Rear of SV board)

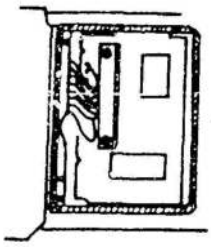


## 18. Water resistant treatment

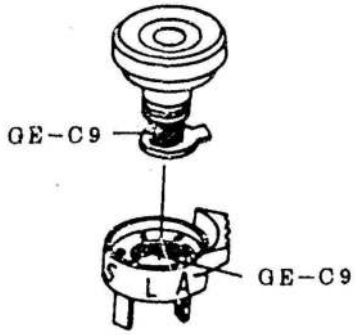
1. Inject silicone in the space between the front panel and the lower body "obi" (band).



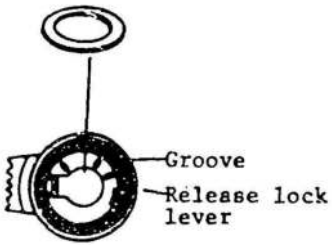

2. Put the rubber seal in the groove and apply silicone (KE-347B) on it.



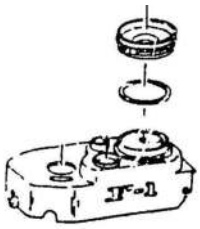
3. Apply grease (GE-C9) between the shutter button'assembly and the release lock ring.



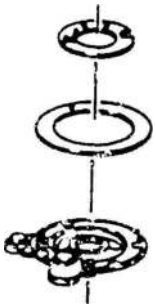

4. Use the teflon washer in the release lock lever.



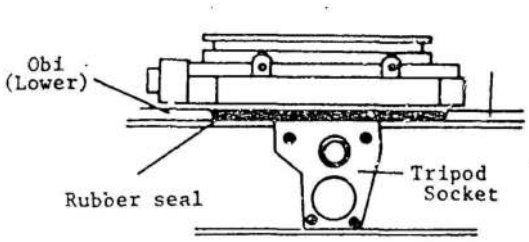

5. Place the teflon washer in the shutter dial seat under the shutter dial.



6. Put two types of teflon washers in the ASA dial.

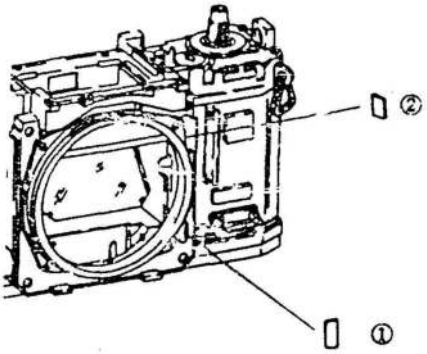


7. Place the rubber seal between the front panel and body die castings.

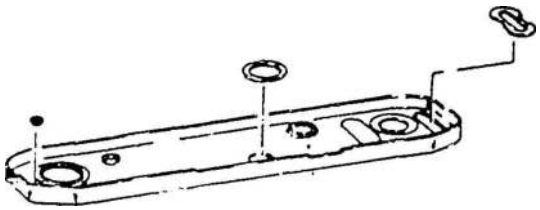



8. Bond the following needle adjustment hole cover in place (1).

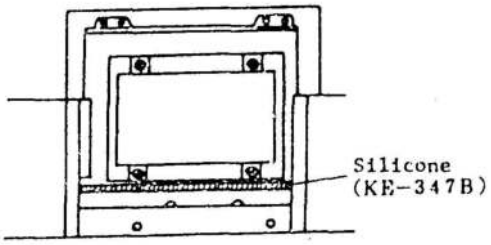
9. Insert the SW 18 conductive rubber cover (2).



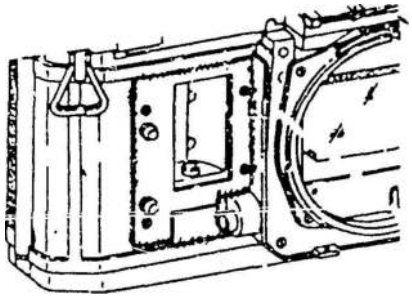

10. Install the water seals in the base cover.



11. Lift the exposure flex out of the way and put silicone (KE 347B) in the space shown below.




12. Put silicone (KE 347B) in the crack around the battery cover.



## 19. Shutter speed variations

(Based on +/- EV) $T=2^{-n}$

| EV \ | 2000 | 1000 | 500 | 250 | 125 | 60 | 30 | 15 | 8 | 4 | 2 | 1″ | 2″ | 4″ | 8″ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | -1 | -2 | -3 |
| 0 500 | 0.691 | 1.381 | 2.762 | 5.524 | 11.05 | 22.10 | 44.19 | 88.39 | 176.8 | 353.6 | 707.1 | 1414.2 | 2828 | 5657 | 11314 |
| 0.450 | 0.667 | 1.334 | 2.668 | 5.336 | 10.67 | 21.34 | 42.69 | 85.38 | 170.8 | 341.5 | 683.0 | 1366.0 | 2732 | 5464 | 10928 |
| 0.400 | 0.644 | 1.289 | 2.577 | 5.154 | 10.31 | 20.62 | 41.23 | 82.47 | 1R4.9 | 329.9 | 659.8 | 1319.5 | 2639 | 5278 | 10556 |
| 0.350 | 0.622 | 1.245 | 2.489 | 4.979 | 9.957 | 19.92 | 39.83 | 79.66 | 159.3 | 318.6 | 637.3 | 1274.6 | 2549 | 5098 | 10197 |
| 0.300 | 0.601 | 1.202 | 2.405 | 4.809 | 9.618 | 19.24 | 38.47 | 76.95 | 153.9 | 307.8 | 615.6 | 1231.1 | 2462 | 4925 | 9849 |
| 0.250 | 0.581 | 1.161 | 2.323 | 4.545 | 9.291 | 18.58 | 37.16 | 74.33 | 148.7 | 297.3 | 594.6 | 1189.2 | 2378 | 4757 | 9514 |
| 0.200 | 0.561 | 1.122 | 2.244 | 4.487 | 8.974 | 17.95 | 35.90 | 71.79 | 143.6 | 287.2 | 574.3 | 1148.7 | 2297 | 4595 | 9190 |
| 0.150 | 0.542 | 1.084 | 2.167 | 4.334 | 8.669 | 17.34 | 34.67 | 69.35 | 138.7 | 277.4 | 554.8 | 1109.6 | 2219 | 4438 | 8877 |
| 0.100 | 0.523 | 1.047 | 2.093 | 4.187 | 8.375 | 16.75 | 33.49 | 66.99 | 134.0 | 267.9 | 535.9 | 1071.8 | 2144 | 4287 | 8574 |
| +0.050 | 0.505 | 1.011 | 2.022 | 4.044 | 8.088 | 16.18 | 32.35 | 64.70 | 129.4 | 258.8 | 517.6 | 1035.3 | 2071 | 4141 | 0282 |
| 0 | 0.488 | 0.977 | 1.953 | 3.906 | 7.813 | 15.62 | 31.25 | 62.50 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| -0.050 | 0.472 | 0.943 | 1.887 | 3.773 | 7.546 | 15.09 | 30.19 | 60.37 | 120.7 | 241.5 | 483.0 | 965.9 | 1931.9 | 3864 | 7727 |
| 0.100 | 0.456 | 0.911 | 1.822 | 3.654 | 7.289 | 14.58 | 29.16 | 58.31 | 116.6 | 233.3 | 466.5 | 933.0 | 1866.1 | 3732 | 7464 |
| 0.150 | 044C | 0.580 | 1.760 | 3.521 | 7.041 | 14.08 | 28.16 | 56.33 | 112.7 | 225.3 | 450.6 | 901.3 | 1802.5 | 3605 | 7210 |
| 0.200 | 0.425 | 0.850 | 1.700 | 3.401 | 6.801 | 13.60 | 27.20 | 54.41 | 108.8 | 217.6 | 435.3 | 870.5 | 1741. 1 | 3482 | 6964 |
| 0.250 | 0.411 | 0.821 | 1.642 | 3.285 | 6.569 | 13.14 | 26.28 | 52.56 | 105.1 | 210.2 | 420.4 | 840.9 | 1681.8 | 3364 | 6727 |
| 0.300 | 0.397 | 0.793 | 1.586 | 3.173 | 6.346 | 12.69 | 25.38 | 50.77 | 101.5 | 203.1 | 406.1 | 812.3 | 1624.5 | 3249 | 6498 |
| 0.350 | 0.383 | 0.766 | 1.532 | 3.065 | 6.130 | 12.26 | 24.52 | 49.04 | 98.07 | 196.1 | 392.3 | 784.6 | 1569.2 | 3138 | 6277 |
| 0.400 | 0.370 | 0.740 | 1.480 | 2.960 | 5.920 | 11.84 | 23.68 | 47.37 | 94.73 | 189.5 | 378.9 | 757.9 | 1 515.7 | 3031 | 6063 |
| 0.450 | 0.357 | 0.715 | 1.430 | 2.860 | 5.719 | 11.44 | 22.88 | 45.75 | 91.51 | 183.0 | 366.0 | 732.0 | 1464.1 | 2928 | 5856 |
| 0.500 | 0.345 | 0.691 | 1.381 | 2.762 | 5.524 | 11.05 | 22.10 | 44.19 | 88.39 | 176.8 | 353.6 | 707.1 | 1 414.2 | 2828 | 5657 |

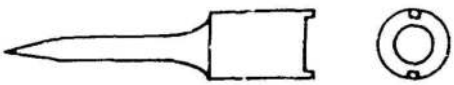
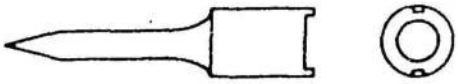
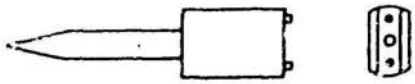
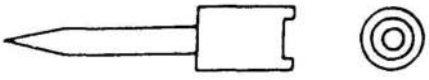
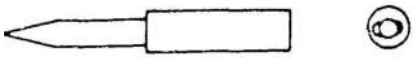
## 20. Service tools list

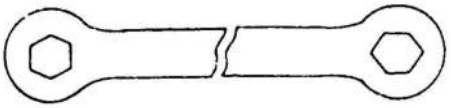
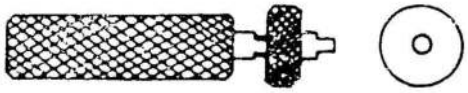
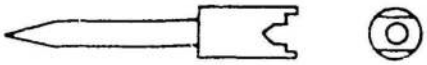
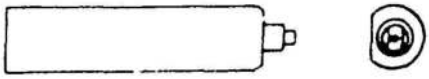
(Ref. No. C1-0751)

TEST EQUIPMENT

| (USE) | (NAME OF TEST EQUIPMENT) |
|---|---|
| 1. Shutter | Shutter Tester (Model 7J-18C) or PA-16 Transistorized Shutter Tester or Simplified Shutter Tester |
| 2. Exposure Meter | 2.1 D.C Voltage Tester (Digital Tester Model VOAC 7 07 or VOAC 77) ( Must measure to 1mV) |
| | 2.2 Standard Brightness Checker (CdS) or Canon Luminance Meter (S.B.C) |
| | 2.3 Oscilloscope (Electric Circuit General Check) |
| 3. Range-Viewfinder | Universal Range-Viewfinder Collimator (SU-006-2) or Universal Range-finder Collimator |
| 4. Mirror for 45° | Universal Type 90° Collimator |
| 5. Field of View | Universal Range-Viewf inder Collimator (SU-006-2). or Universal Parallax Collimator |
| 6. Flange - Focal Distance | 42.14mm Dial Gauge |
| 7. Adjustments | 7.1. Dial Tension Cages (Correx.) 0-300 g, 0-1Kg |
| | 7.2. Depth Gage (Max. Aperture correction Pin) |
| | 7.3. Retaining Ring Pliers AOG |
| 8. Electrical Adjustment | Precision Variable Resistors (for selecting adjustment resistor values) - Local Purchase<br>1. 200kohm<br>2. 10kohm<br>3. 500kohm |

SMALL HAND TOOLS
Canon NEW F-1
(C12-0751)

| Place of use | |
|---|---|
| Rewind Shaft | CY9-6129-000  |
| AVO Wiper | CY9-6130-000 |
| Winding Lever Screw,<br>Shutter Button Ring | CY9-6131-000 |
| ASA Dial Nut | CY9-6132-000  |
| 2nd Curtain Latch | CY9-6133-000 |
| Rewind Knob Pin-face Screw | CY9-6134-000  |
| Pentaprism Button Holder | CY9-6135-000 |
| Charge lever Shaft | CY9-6125-000  |
| 1st. Curtain Brake Shaft | CY9-6126-000  |

| | |
|---|---|
| Indicator Cable | CY9-6127-000  |
| VR TV Circuit Board | CY9-6128-000 |
| Shutter Adj. | CY9-6136-000 |
| P.C. Terminal | CY9-6137-000  |
| Mirror Angle (45°) Adj | CY9-6138-000 |
| SW 5 Nut | CY9-6139-000  |
| Frame Counter Ratchet | CY9-6140-000 |
| Following Needle Adj | CY9-6141-000 |
| Winding Tool | CY9-6142-000  |

# 21. Troubleshooting charts

Series 1: Shutter Will Not Release

1.1 Meter Always ON

1.2 Miscellaneous

1.3 No V Batt

1.4 No E 1

1.5 No Vc

1.6 No KVc

1.7 Sw 2 Check

1.8 Sw 4 Check

1.9 Sw 5 Check

1.10 Sw 11 Check

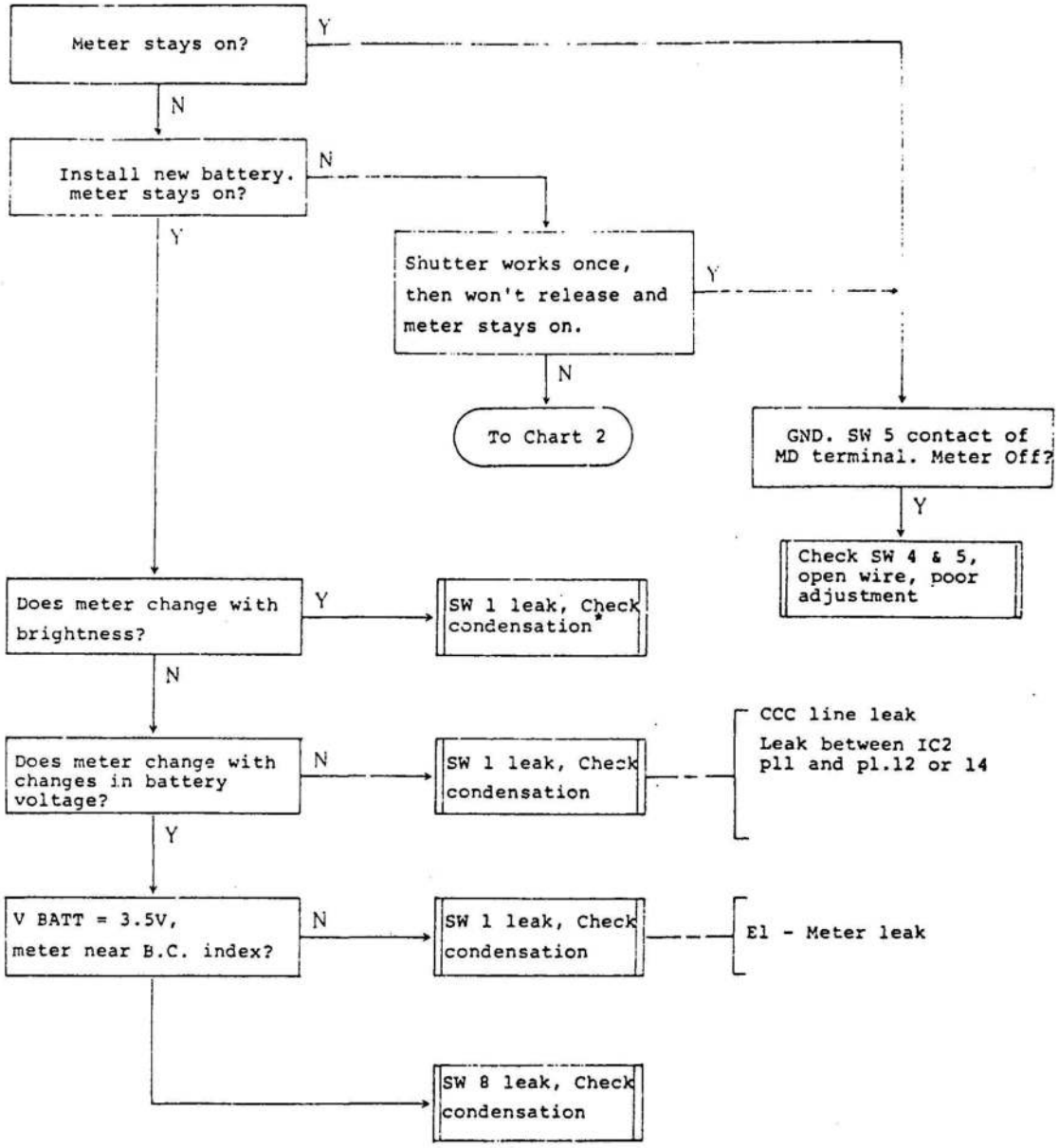
1.11 Mg 3 Check

1.12 Mg 3 Check

1.13 No Clock Pulse

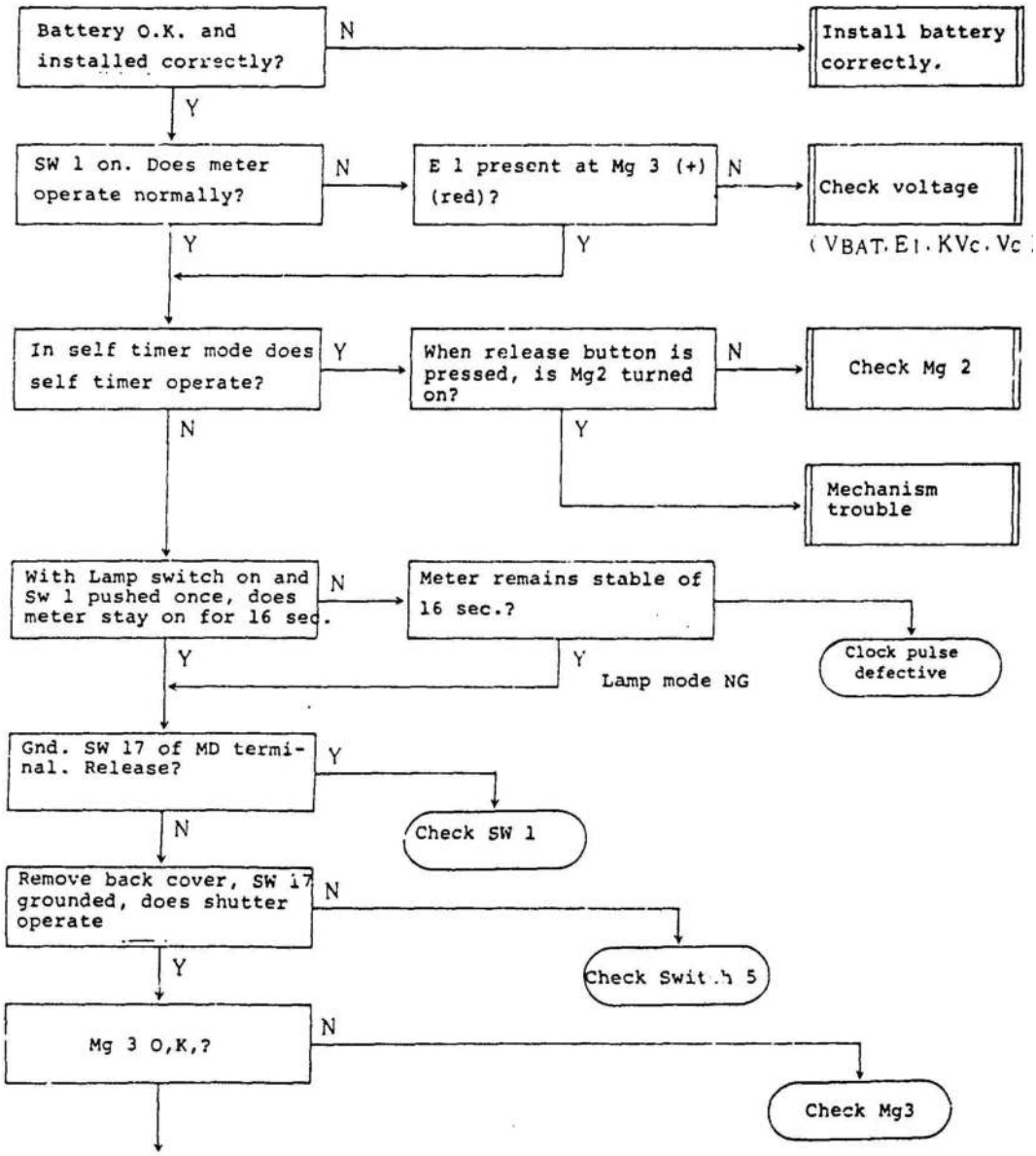
Note: All circuits are coated with Tuffy TF-1156 which must be penetrated to make contact with the probe.

1.1 Meter always on

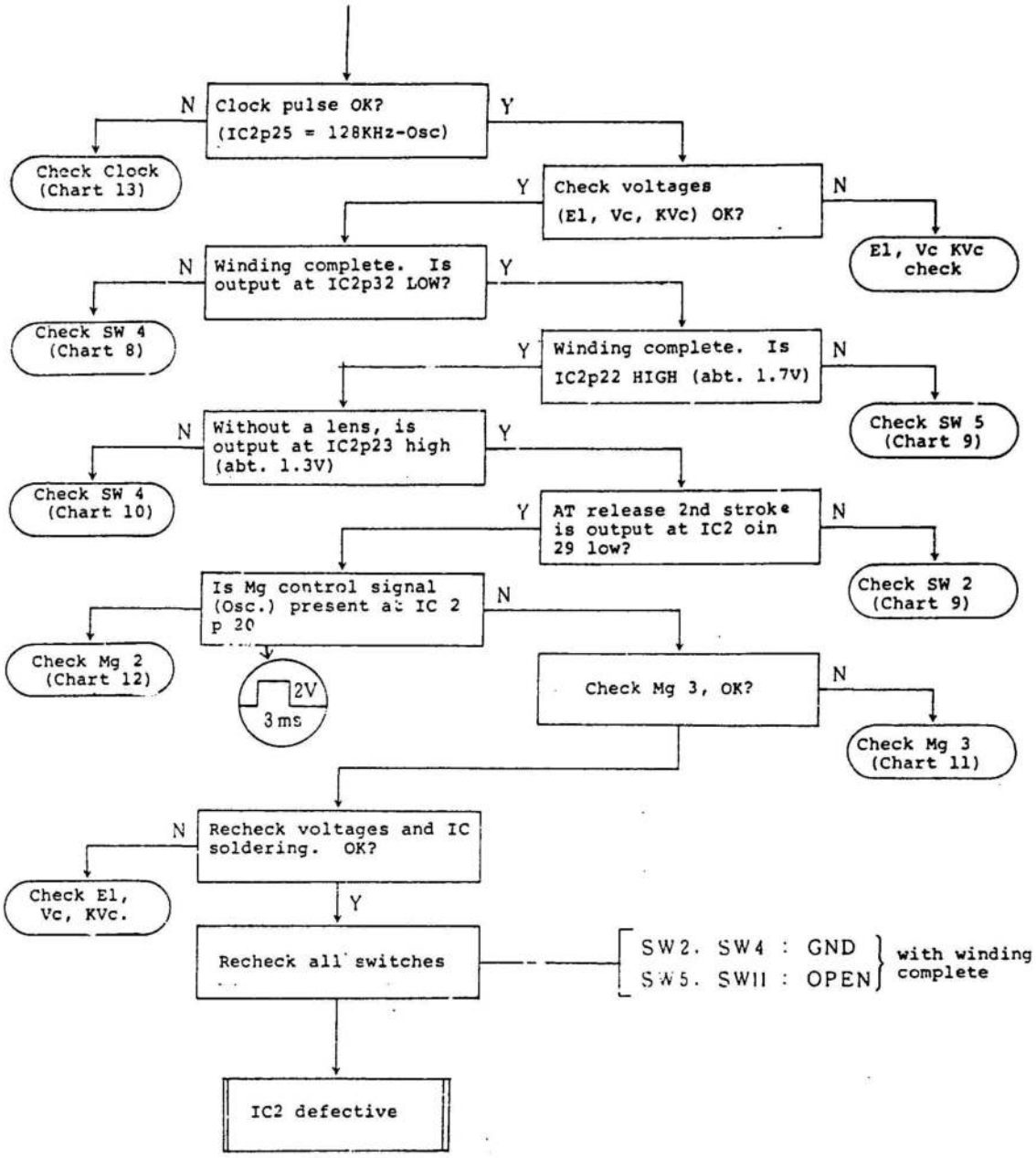



*: Check for after effects (stains, etc.) of moisture condensation.

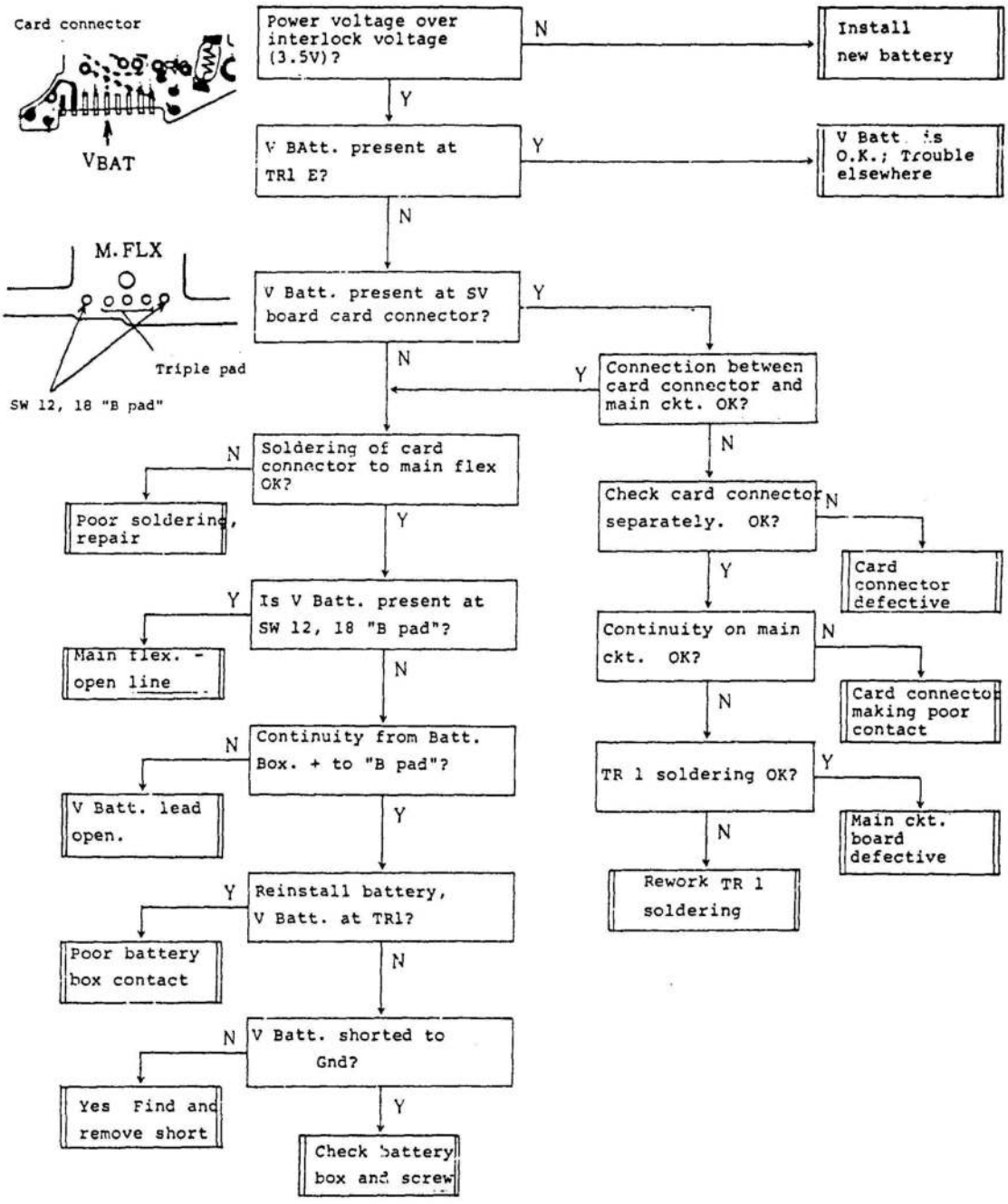
1.2 Miscellaneous



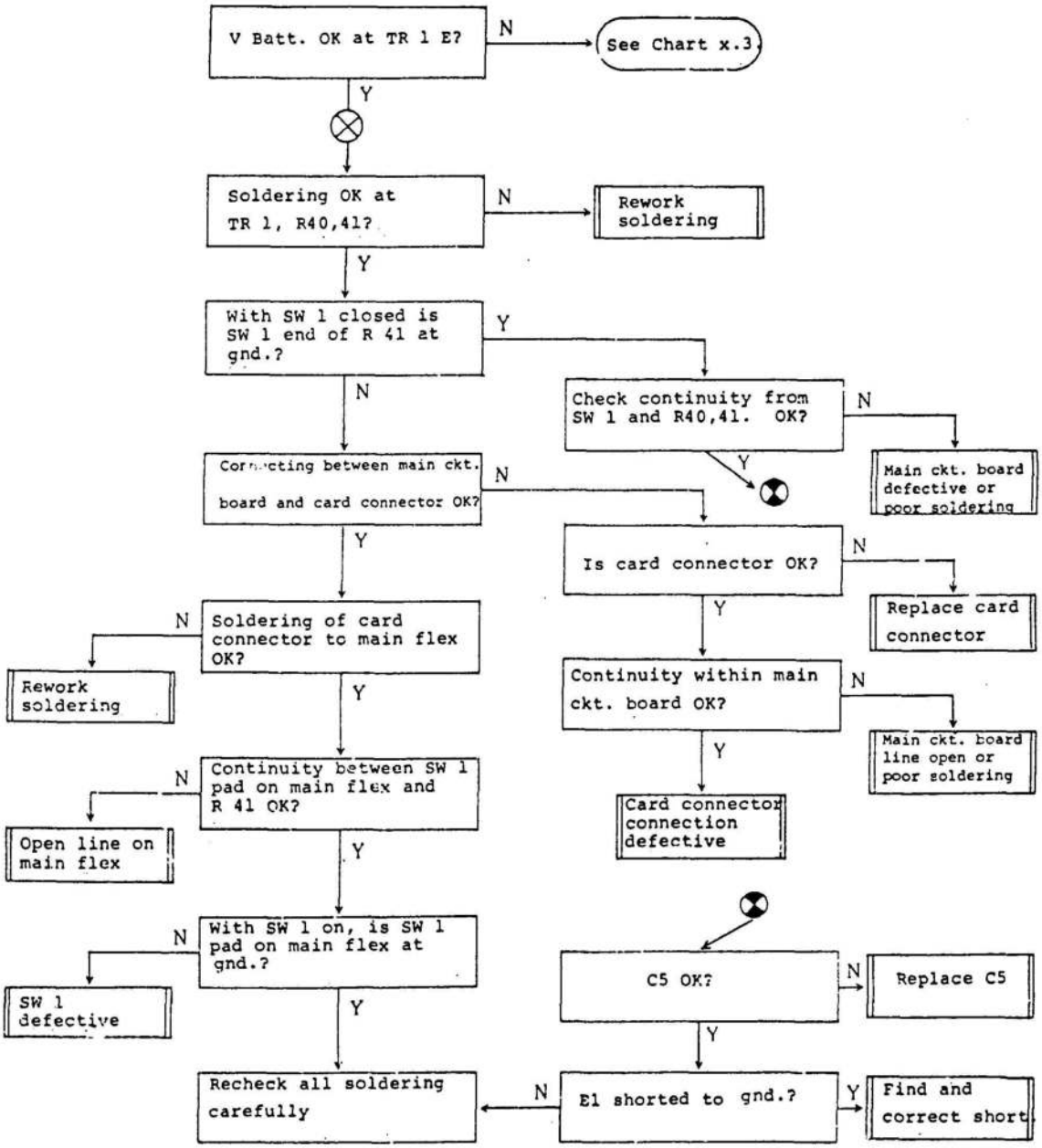
1.2 Miscellaneous (contd.)



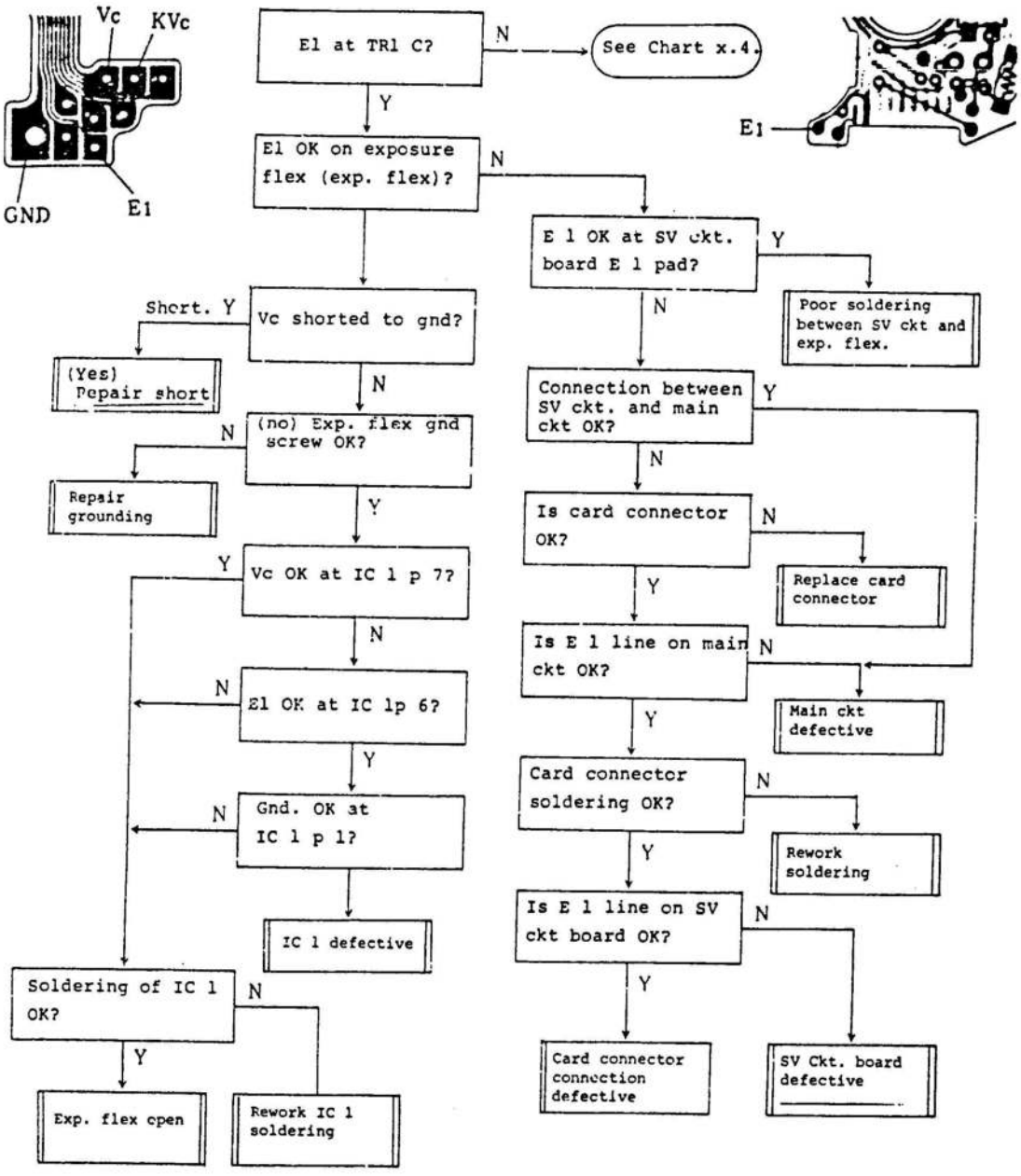
## 1.3 No V Batt


Card connector
VBAT
Power voltage over interlock voltage (3.5V)?
N
Install new battery
Y
V BAtt. present at TR1 E?
Y
V Batt is O.K.; Trouble elsewhere
N
M.FLX
Triple pad
SW 12, 18 "B pad"
V Batt. present at SV board card connector?
Y
N
Y
Connection between card connector and main ckt. OK?
N
Soldering of card connector to main flex OK?
N
Poor soldering, repair
Y
Check card connector separately. OK?
N
Card connector defective
Y
Is V Batt. present at SW 12, 18 "B pad"?
Y
Main flex. - open line
N
Continuity on main ckt. OK?
N
Card connector making poor contact
N
Continuity from Batt. Box. + to "B pad"?
N
V Batt. lead open.
Y
TR 1 soldering OK?
Y
Main ckt. board defective
N
Rework TR 1 soldering
Y
Reinstall battery, V Batt. at TR1?
Y
Poor battery box contact
N
N
V Batt. shorted to Gnd?
N
Yes Find and remove short
Y
Check battery box and screw

1.4 No E 1

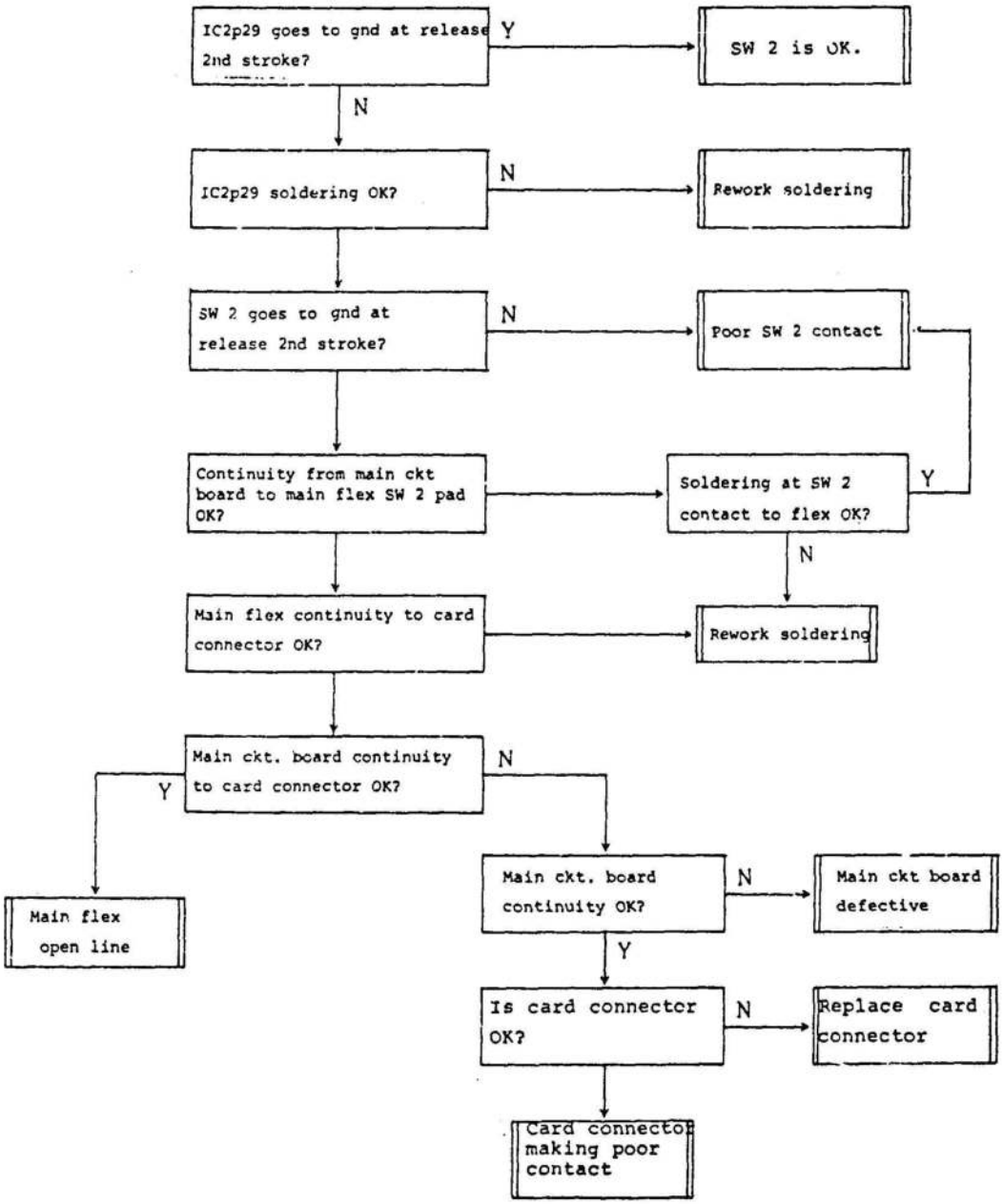

V Batt. OK at TR 1 E?
N
See Chart x.3
Y
Soldering OK at TR 1, R40,41?
N
Rework soldering
Y
With SW 1 closed is SW 1 end of R 41 at gnd.?
Y
N
Check continuity from SW 1 and R40,41. OK?
N
Main ckt. board defective or poor soldering
Y
Connecting between main ckt. board and card connector OK?
N
Y
Is card connector OK?
N
Replace card connector
Y
Soldering of card connector to main flex OK?
N
Rework soldering
Y
Continuity within main ckt. board OK?
N
Main ckt. board line open or poor soldering
Y
Continuity between SW 1 pad on main flex and R 41 OK?
N
Open line on main flex
Y
Card connector connection defective
With SW 1 on, is SW 1 pad on main flex at gnd.?
N
SW 1 defective
Y
C5 OK?
N
Replace C5
Y
Recheck all soldering carefully
N
E1 shorted to gnd.?
Y
Find and correct short

1.5 No Vc (Correct Vc : 1.3V +/- 50mV)

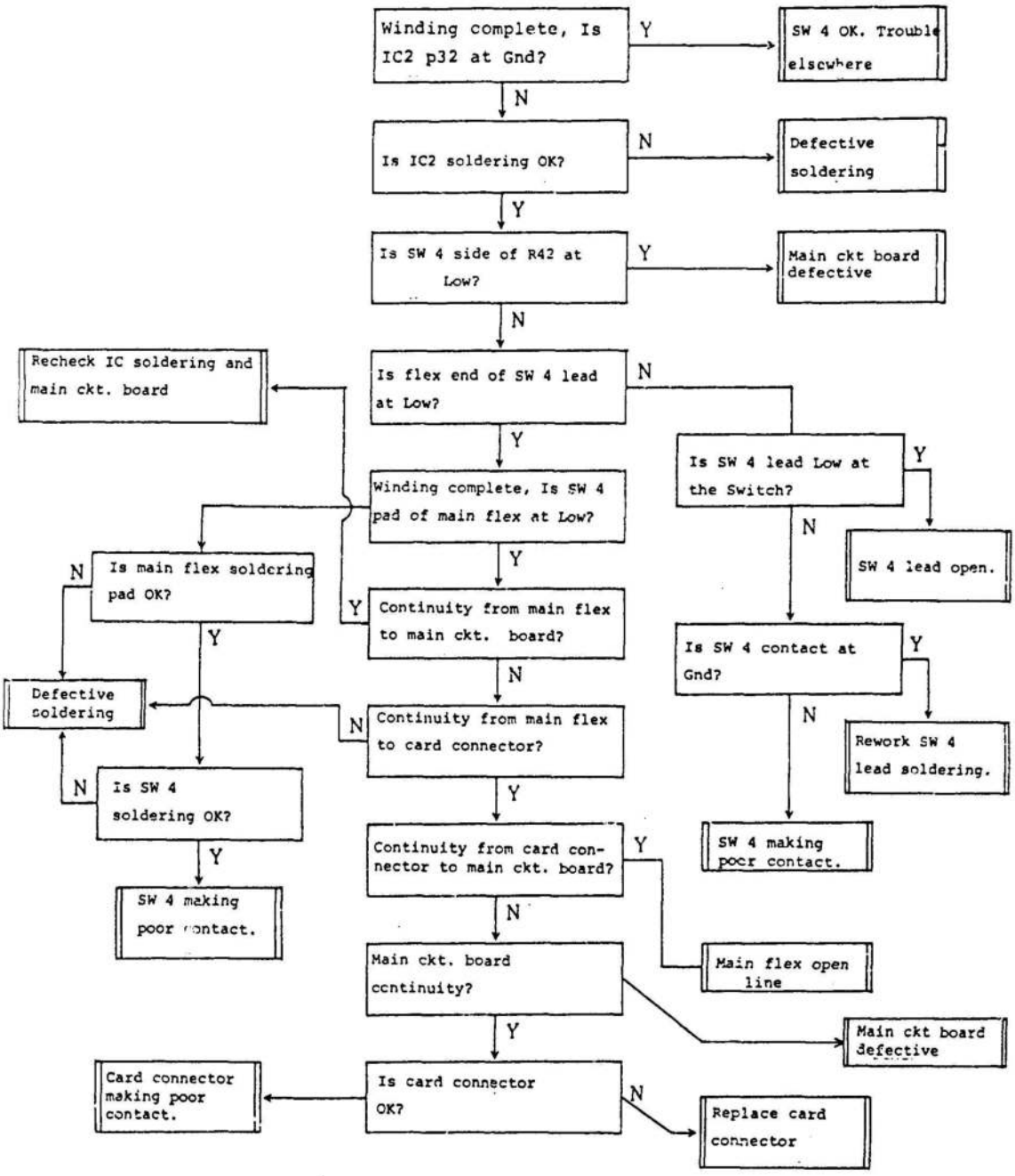



1.6 No KVC Page missing

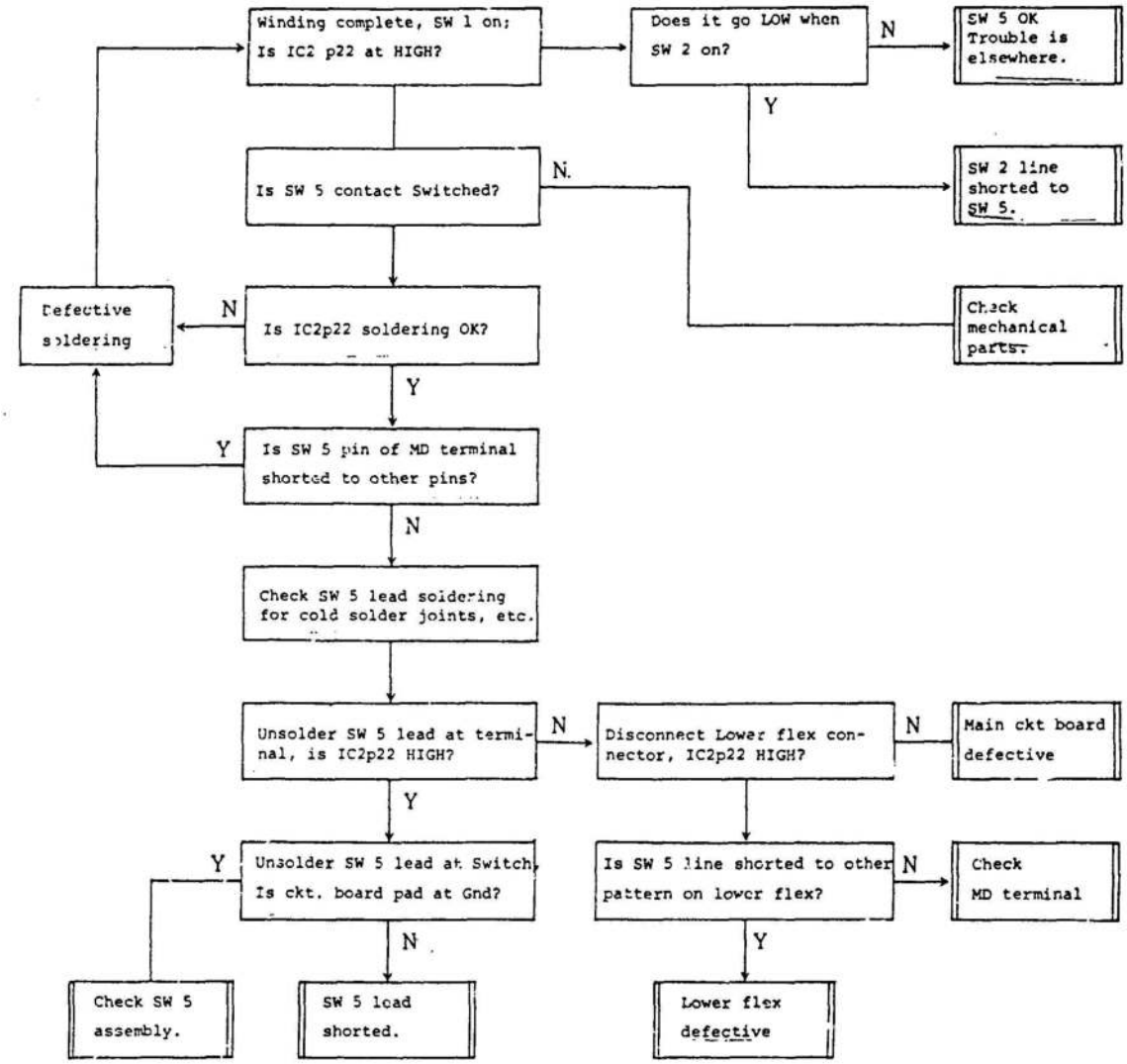
1.7 SW 2 Check


IC2p29 goes to gnd at release 2nd stroke?
Y
SW 2 is OK.
N
IC2p29 soldering OK?
N
Rework soldering
SW 2 goes to gnd at release 2nd stroke?
N
Poor SW 2 contact
Continuity from main ckt board to main flex SW 2 pad OK?
Soldering at SW 2 contact to flex OK?
Y
N
Main flex continuity to card connector OK?
Rework soldering
Main ckt. board continuity to card connector OK?
N
Y
Main flex open line
Main ckt. board continuity OK?
N
Main ckt board defective
Y
Is card connector OK?
N
Replace card connector
Card connector making poor contact

1.8 SW 4 Check

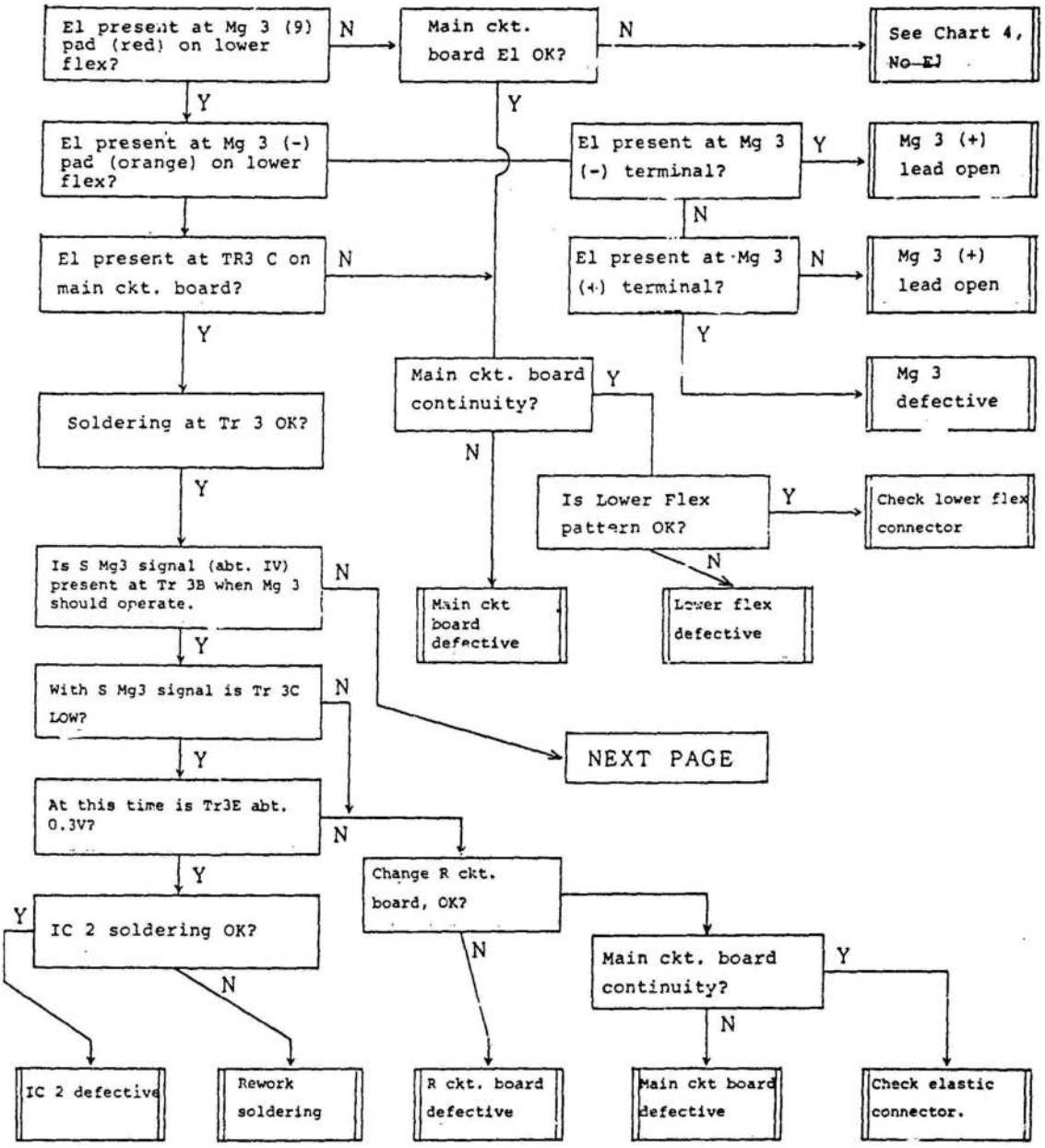

Winding complete, Is IC2 p32 at Gnd?
Y
SW 4 OK. Trouble elsewhere
N
Is IC2 soldering OK?
N
Defective soldering
Y
Is SW 4 side of R42 at Low?
Y
Main ckt board defective
N
Recheck IC soldering and main ckt. board
Is flex end of SW 4 lead at Low?
N
Y
Winding complete, Is SW 4 pad of main flex at Low?
Is SW 4 lead Low at the Switch?
Y
N
SW 4 lead open.
N
Is main flex soldering pad OK?
Y
Continuity from main flex to main ckt. board?
Is SW 4 contact at Gnd?
Y
N
Defective soldering
N
Continuity from main flex to card connector?
Rework SW 4 lead soldering.
N
Is SW 4 soldering OK?
Y
Continuity from card connector to main ckt. board?
Y
SW 4 making poor contact.
SW 4 making poor contact.
N
Main ckt. board continuity?
Main flex open line
Main ckt board defective
Y
Card connector making poor contact.
Is card connector OK?
N
Replace card connector

## 1.9 SW 5 Check

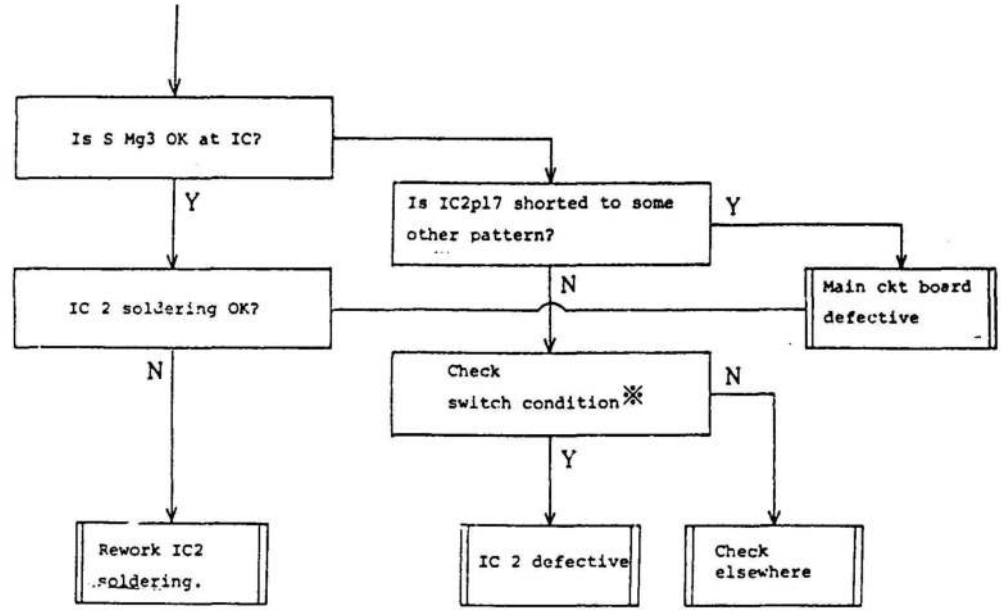

Winding complete, SW 1 on; Is IC2 p22 at HIGH?
Does it go LOW when SW 2 on?
N
SW 5 OK Trouble is elsewhere.
Y
Is SW 5 contact Switched?
N.
SW 2 line shorted to SW 5.
Defective soldering
N
Is IC2p22 soldering OK?
Check mechanical parts.
Y
Y
Is SW 5 pin of MD terminal shorted to other pins?
N
Check SW 5 lead soldering for cold solder joints, etc.
Unsolder SW 5 lead at terminal, is IC2p22 HIGH?
N
Disconnect Lower flex connector, IC2p22 HIGH?
N
Main ckt board defective
Y
Y
Unsolder SW 5 lead at Switch, Is ckt. board pad at Gnd?
Is SW 5 line shorted to other pattern on lower flex?
N
Check MD terminal
N
Y
Check SW 5 assembly.
SW 5 lead shorted.
Lower flex defective

## 1.10 SW 11 Check  Page missing

## 1.11 Mg 3 Check

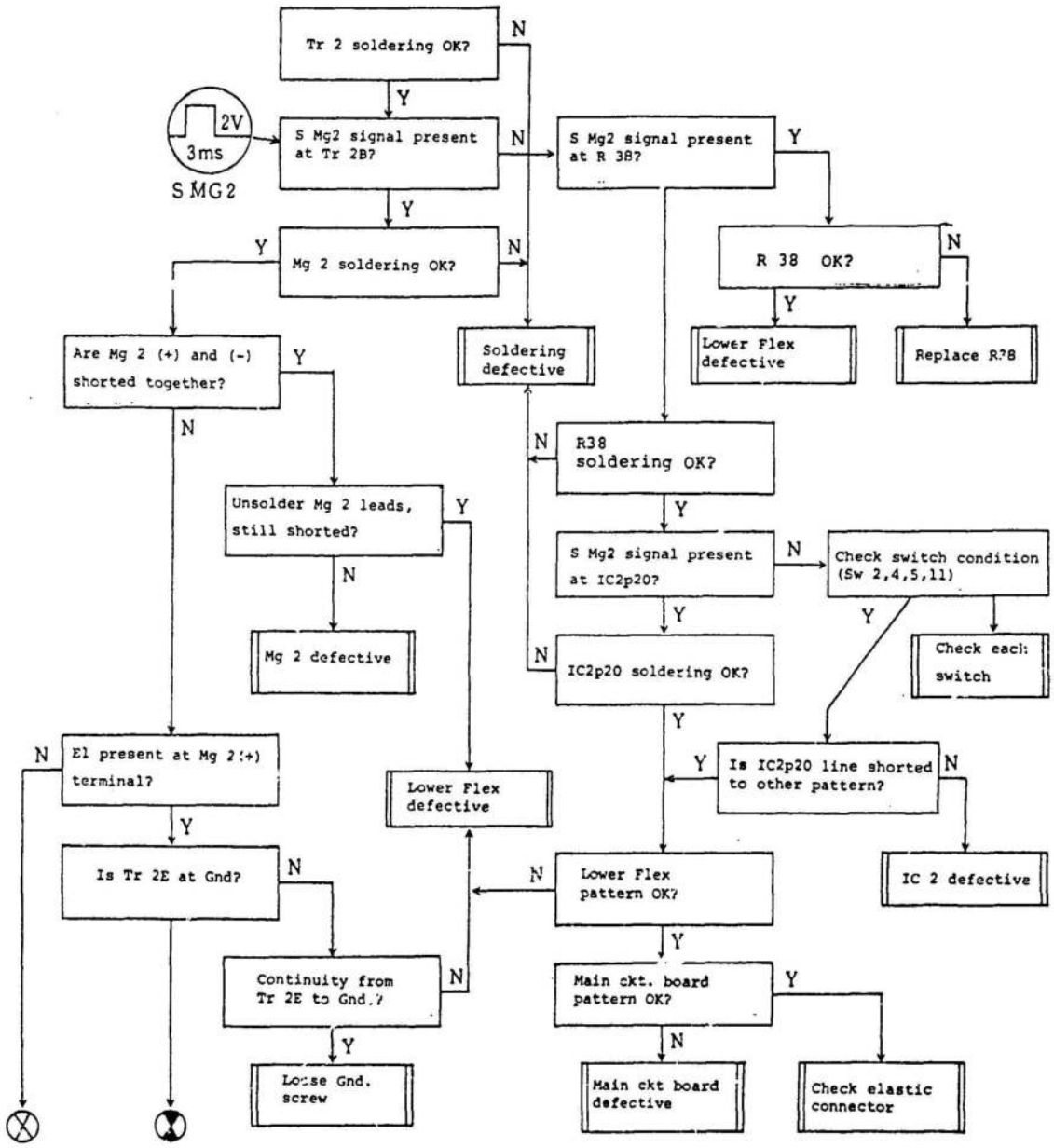


1.11 Mg 3 Check (contd.)

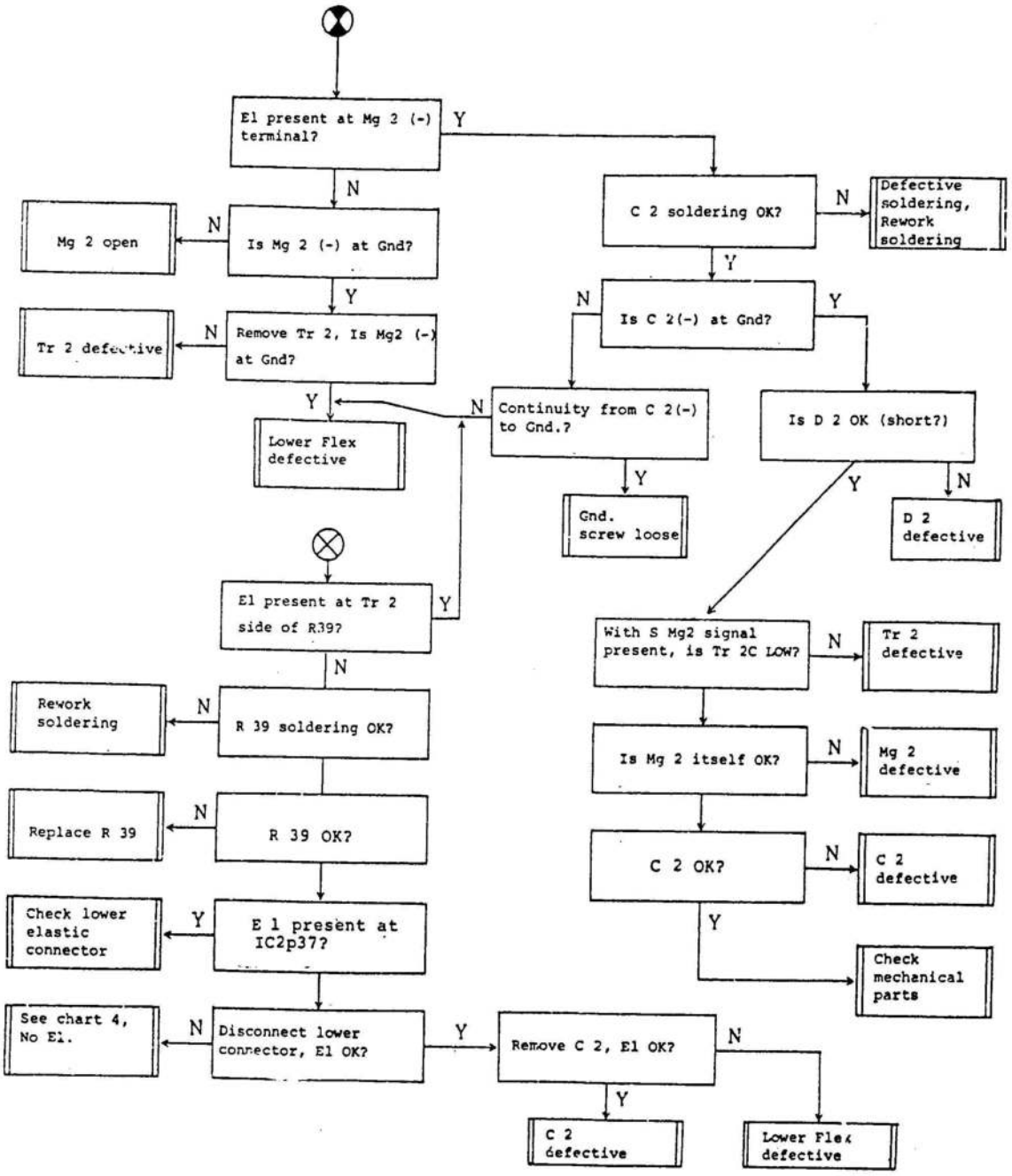



※: Winding Complete at release { SW2, SW4 : GND
SW5, SW11 : OPEN

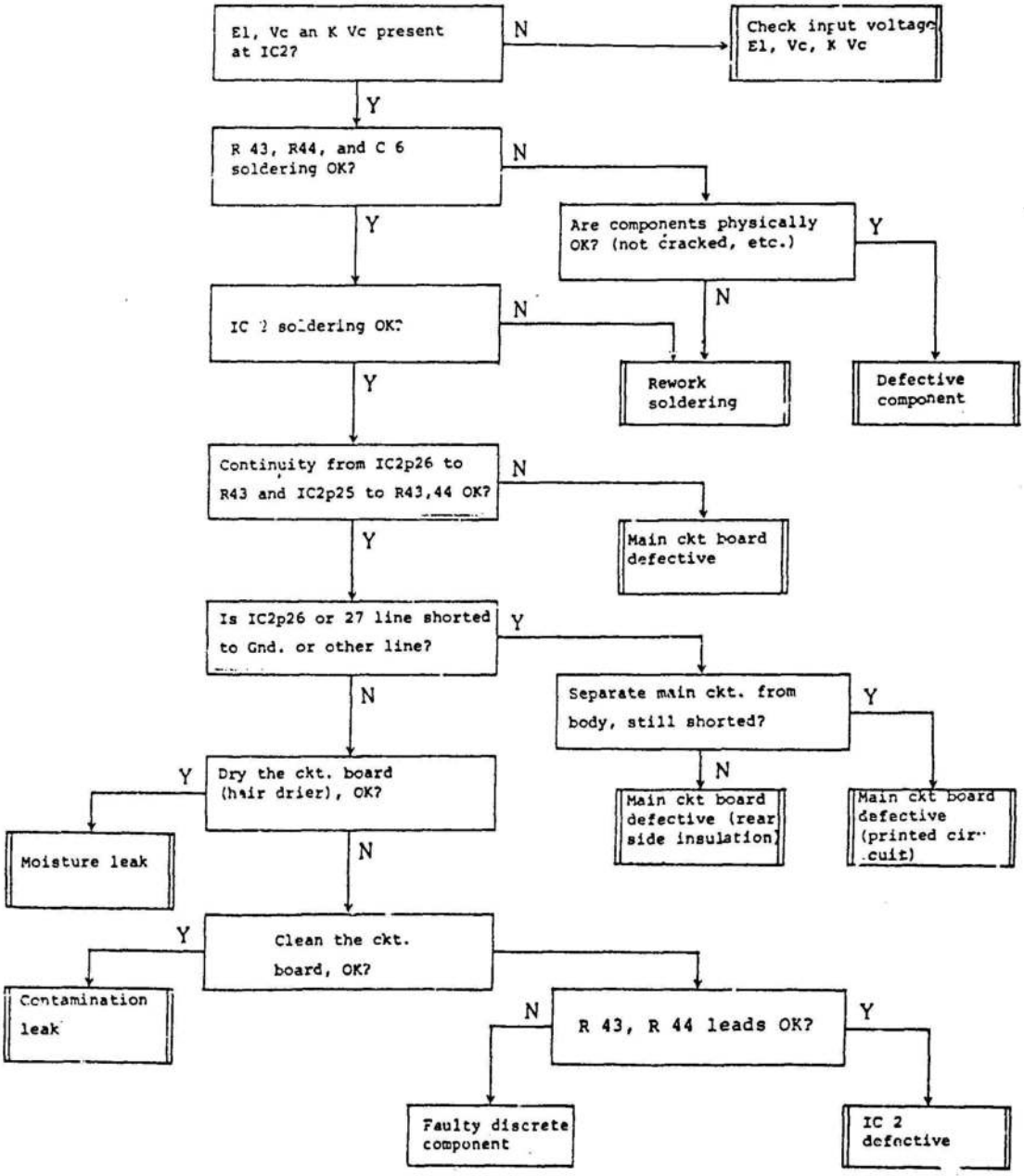
## 1.12 Mg 2 Check


Tr 2 soldering OK?
2V
3ms
S MG2
S Mg2 signal present at Tr 2B?
S Mg2 signal present at R 38?
Mg 2 soldering OK?
R 38 OK?
Are Mg 2 (+) and (-) shorted together?
Soldering defective
Lower Flex defective
Replace R?8
R38 soldering OK?
Unsolder Mg 2 leads, still shorted?
S Mg2 signal present at IC2p20?
Check switch condition (Sw 2,4,5,11)
Mg 2 defective
IC2p20 soldering OK?
Check each switch
El present at Mg 2 (+) terminal?
Lower Flex defective
Is IC2p20 line shorted to other pattern?
Is Tr 2E at Gnd?
Lower Flex pattern OK?
IC 2 defective
Continuity from Tr 2E to Gnd.?
Main ckt. board pattern OK?
Loose Gnd. screw
Main ckt board defective
Check elastic connector

1.12 Mg 2 Check (contd.)



## 1.13 No Clock Pulse



## 22. Parts Lists

CANOW NEW F-1 SERVICE PARTS POLICY

1. THE POLICY OF CAMERA SERVICE, TOKYO, IS TO STOCK ALL PARTS NECESSARY TO EFFECT EFFICIENT ECONOMICAL SERVICE. IT IS NEITHER NECESSARY NOR TECHNICALLY FEASIBLE TO STOCK SEPARATELY EVERY PART THAT GOES INTO EACH PRODUCT.

   IN ESTABLISHING THE SPARE PARTS LIST, WE CONSIDER REPAIR DIFFICULTY, LABOR COST, SPECIAL TOOL REQUIREMENTS AND INDIVIDUAL PARTS Vs. ASSEMBLED UNIT COST TO DETERMINE IN WHICH FORM PARTS WILL BE STOCKED.

2. A RECENT REVIEW HAS SHOWN THAT IT IS MORE ECONOMICAL AND ADVANTAGEOUS TO THE CUSTOMER, THE SERVICE FACILITY AND US TO STOCK INDIVIDUAL PARTS UNLESS THERE IS AN OVERRIDING REASON FOR STOCKING PRE-ASSEMBLED UNITS.

   THE UNITS LISTED BELOW ARE STOCKED AS UNITS BECAUSE THEY REQUIRE TOOLS OR TECHNICS NOT NORMALLY AVAILABLE AT FIELD SERVICE LEVEL.

   CG1-0131-000 MASTER GEAR UNIT
   CG1-0132-000 SPRING DRUM UNIT
   CG1-0139-000 ELECTRIC PARTS UNIT
   CG1-0141-000 ACTION GRIP UNIT

   IN ADDITION TO THE ABOVE, WHICH ARE STOCKED ONLY AS UNITS, SOME INDIVIDUAL PARTS ARE STOCKED FOR THE FOLLOWING UNITS IN ADDITION TO THE UNIT.

   CY1-1210-000 SPOOL ASSY
   CG1-0133-000 MAGNET-3 UNIT
   CG1-C134-000 HAGNET-2 UNIT
   CG1-0135-000 BATTERY CHAMBER UNIT
   CG1-0137-000 METER/INDICATOR UNIT
   CG1-0142-000 WINDING UNIT
   CG1-0143-000 SHUTTER SPEED SELECTOR
   CG9-0156-000 SAFETY LOCK ASSY
   CG9-0167-000 REWIND CRANK UNIT
   CG9-0171-000 AE RESISTOR UNIT
   CG9-0172-000 MAX. APERTURE CORRECTION UNIT
   CG9-0174-000 MIRROR ASSY
   CG9-0177-0C0 A MODE ASSY

3. INDIVIDUAL ELECTRICAL COMPONENTS WHICH MAY REQUIRE REPLACEMENT ARE STOCKED. OTHERS ARE LISTED WITH THEIR SPECIFICATIONS ON THE BACK OR THE WIRING DIAGRAM.

4. THE SPARE PARTS LIST IS ADJUSTED PERIODICALLY TO INSURE THE NECESSARY PARTS ARE ALWAYS AVAILABLE, AND UNNECESSARY PARTS ARE REMOVED FROM THE STOCK LIST.

5. ASSEMBLIES SHOWN WITH THE N.S. MARK ARE SHOWN FOR CLARITY ONLY. THEY ARE NOT STOCKED IN THE FORM SHOWN.

6. THE PARTS STOCKED AS SERVICE PARTS ARE NOT ALWAYS EXACTLY THE SAME PART USED ON THE ASSEMBLY LINE, BUT THEY ARE PROPERLY INTERCHANGEABLE(SCREWS, WASHERS, LEAD WIRE, ETC.)

7. IN THE EXPLODED VIEW, THERE ARE CERTAIN SCREWS WITH A "7" AS THE FINAL DIGIT OF THEIR PART NUMBER. THESE SCREWS PROVIDE ELECTRICAL GROUPS. SCREWS WITH A "9" FINAL DIGIT, WHICH CAN USUALLY BE SUBSTITUTED FOR "7" SCREWS, CANNOT BE USED IN THESE CASES.

REF.NO.C12-0751

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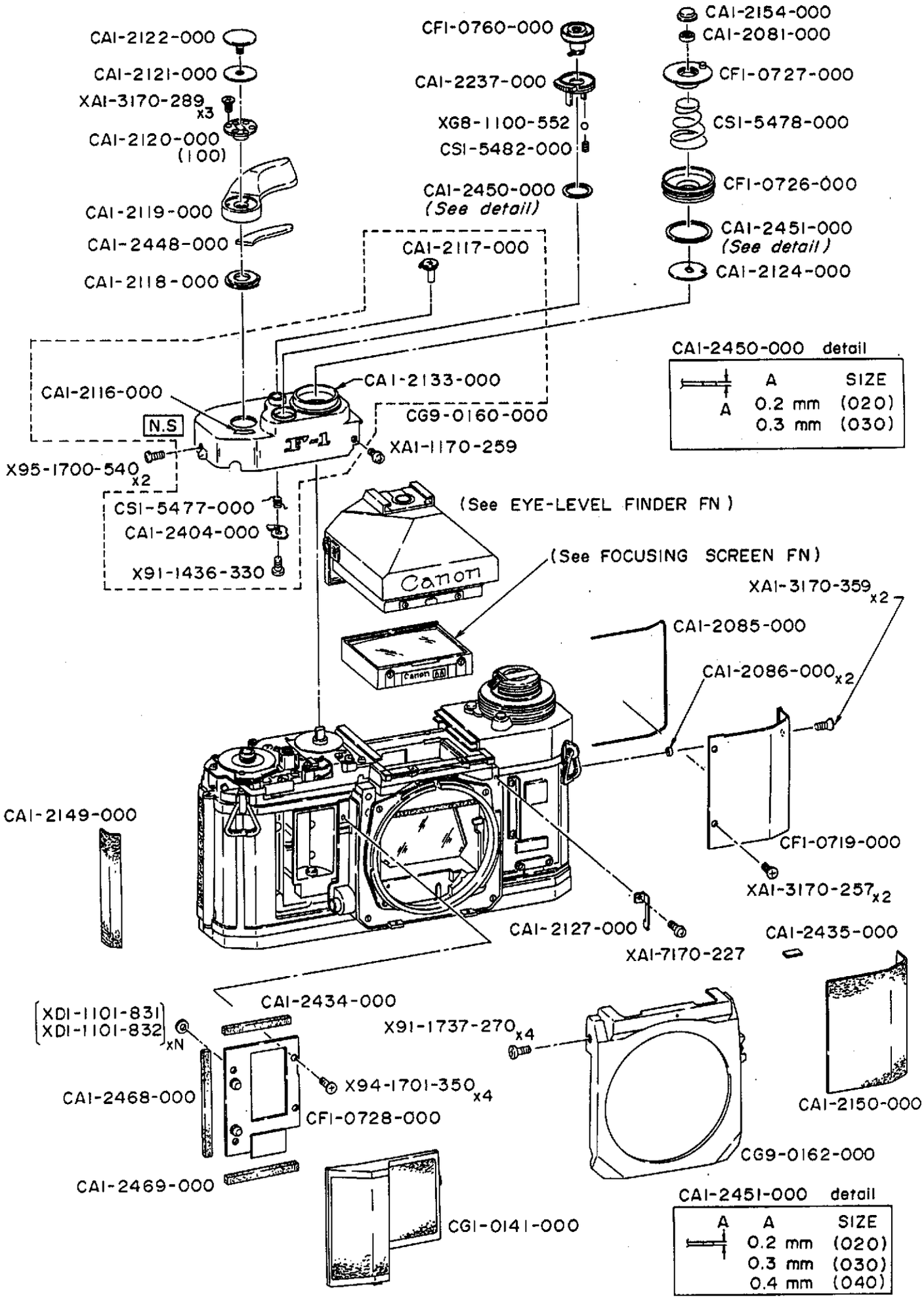
# CANON NEW F-1




CAI-2450-000 detail

| A | SIZE |
|---|---|
| 0.2 mm | (020) |
| 0.3 mm | (030) |

CAI-2451-000 detail

| A | SIZE |
|---|---|
| 0.2 mm | (020) |
| 0.3 mm | (030) |
| 0.4 mm | (040) |

# PARTS LIST

REF.NO.C12-0751

| NEW PARTS NO. | CLASS | QTY | DESCRIPTION |
|---|---|---|---|
| CA1-2081-000 | D | 1 | NUT |
| CA1-2085-000 | D | 1 | RING, O |
| CA1-2086-000 | D | 2 | COLLAR |
| CA1-2116-000 | C | 1 | WINDOW, FILM COUNTER |
| CA1-2117-000 | C | 1 | BUTTON, REWIND |
| CA1-2118-000 | D | 1 | SPACER |
| CA1-2119-000 | C | 1 | LEVER, WINDING |
| CA1-2120-000(100) | E | 1 | GUIDE, WINDING LEVER |
| CA1-2121-000 | C | 1 | SPACER |
| CA1-2122-000 | A | 1 | SCREW, FLAT FACE |
| CA1-2123-000 | D | 1 | SEAL, MOISTURE |
| CA1-2124-000 | E | 1 | PLATE, COUPLING |
| CA1-2127-000 | D | 1 | CONTACT |
| CA1-2149-000 | C | 1 | RUBBER, GRIP |
| CA1-2150-000 | C | 1 | RUBBER, GRIP |
| CA1-2154-000 | A | 1 | CAP |
| CA1-2237-000 | B | 1 | LOCK, RELEASE |
| CA1-2404-000 | E | 1 | LEVER, REWIND BUTTON LOCK |
| CA1-2434-000 | C | 1 | SHIELD, LIGHT |
| CA1-2435-000 | D | 1 | PLATE, LIGHT SHIELD |
| CA1-2448-000 | C | 1 | PLATE, WINDING LEVER |
| CA1-2450-000(XXX) | D | 1 | WASHER |
| CA1-2451-000(XXX) | D | 1 | WASHER |
| CA1-2468-000 | C | 1 | SHIELD, LIGHT |
| CA1-2469-000 | C | 1 | SHIELD, LIGHT |
| CF1-0719-000 | D | 1 | BEEPER ASS'Y |
| CF1-0726-000 | D | 1 | RING, SHUTTER DIAL |
| CF1-0727-000 | C | 1 | DIAL, SHUTTER SPEED |
| CF1-0728-000 | D | 1 | COVER, BATTERY COMPARTMENT |
| CF1-0760-000 | B | 1 | BUTTON, SHUTTER |
| CG1-0141-000 | B | 1 | GRIP ASS'Y, ACTION |
| CG9-0160-000 | B | 1 | COVER, TOP(RIGHT) |
| CG9-0162-000 | B | 1 | COVER ASS'Y, FRONT |
| CS1-5477-000 | E | 1 | SPRING |
| CS1-5478-000 | D | 1 | SPRING, COIL |
| CS1-5482-000 | E | 1 | SPRING, COIL |
| X91-1436-330 | | 1 | SCREW |
| X91-1737-270 | | 4 | SCREW |
| X94-1701-350 | | 4 | SCREW |
| X95-1700-540 | | 2 | SCREW |
| XA1-1170-259 | | 1 | SCREW |
| XA1-3170-257 | | 2 | SCREW |
| XA1-3170-289 | | 3 | SCREW |
| XA1-3170-359 | | 2 | SCREW |
| XA1-7170-227 | | 1 | SCREW |
| XD1-1101-831 | | 1 | WASHER |
| XD1-1101-832 | | 1 | WASHER |
| XG8-1100-552 | | 1 | BALL |

# CANON NEW F-1

CAI-2102-000 detail

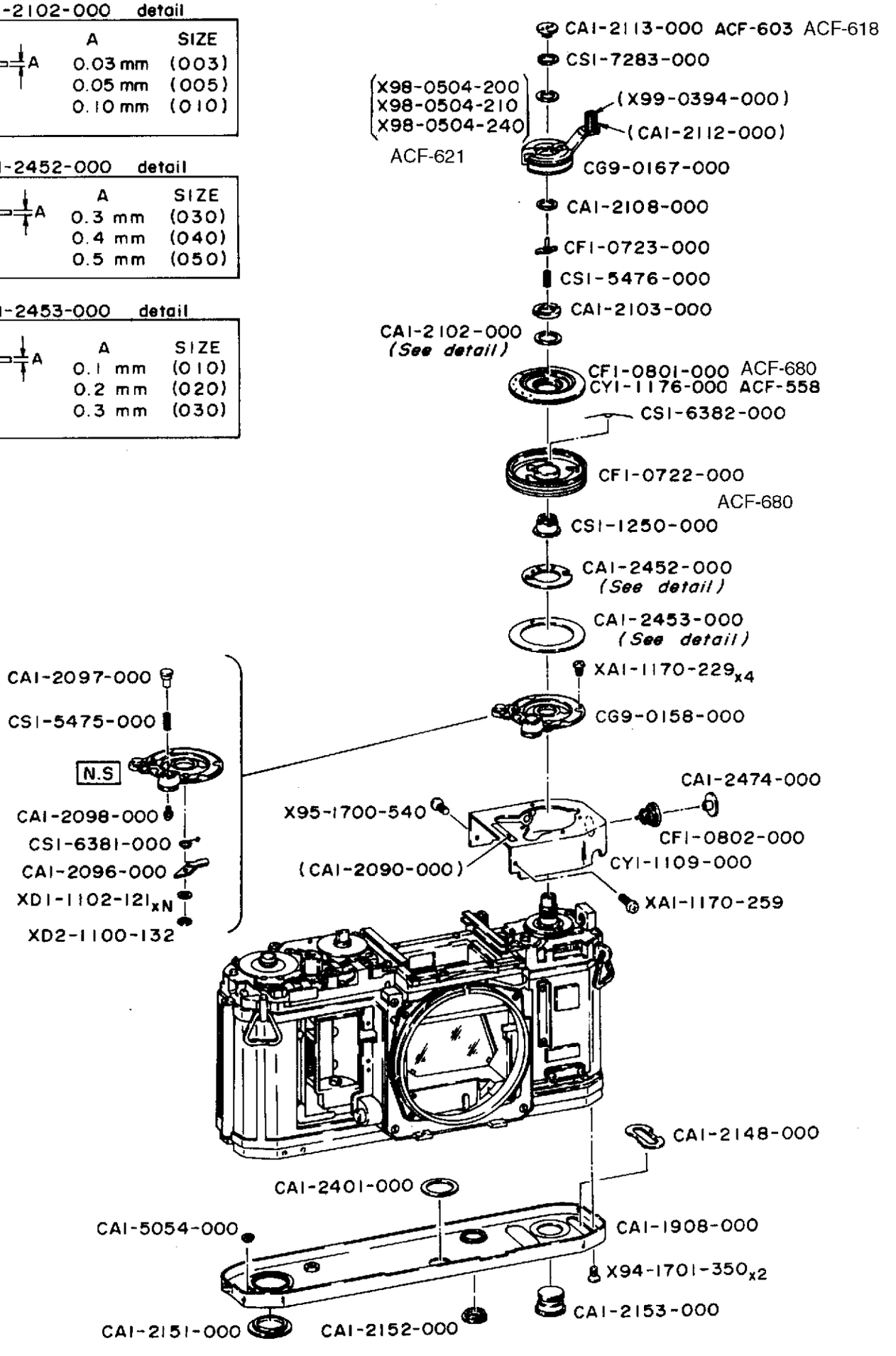
| A | SIZE |
|---|---|
| 0.03 mm | (003) |
| 0.05 mm | (005) |
| 0.10 mm | (010) |

CAI-2452-000 detail

| A | SIZE |
|---|---|
| 0.3 mm | (030) |
| 0.4 mm | (040) |
| 0.5 mm | (050) |

CAI-2453-000 detail

| A | SIZE |
|---|---|
| 0.1 mm | (010) |
| 0.2 mm | (020) |
| 0.3 mm | (030) |



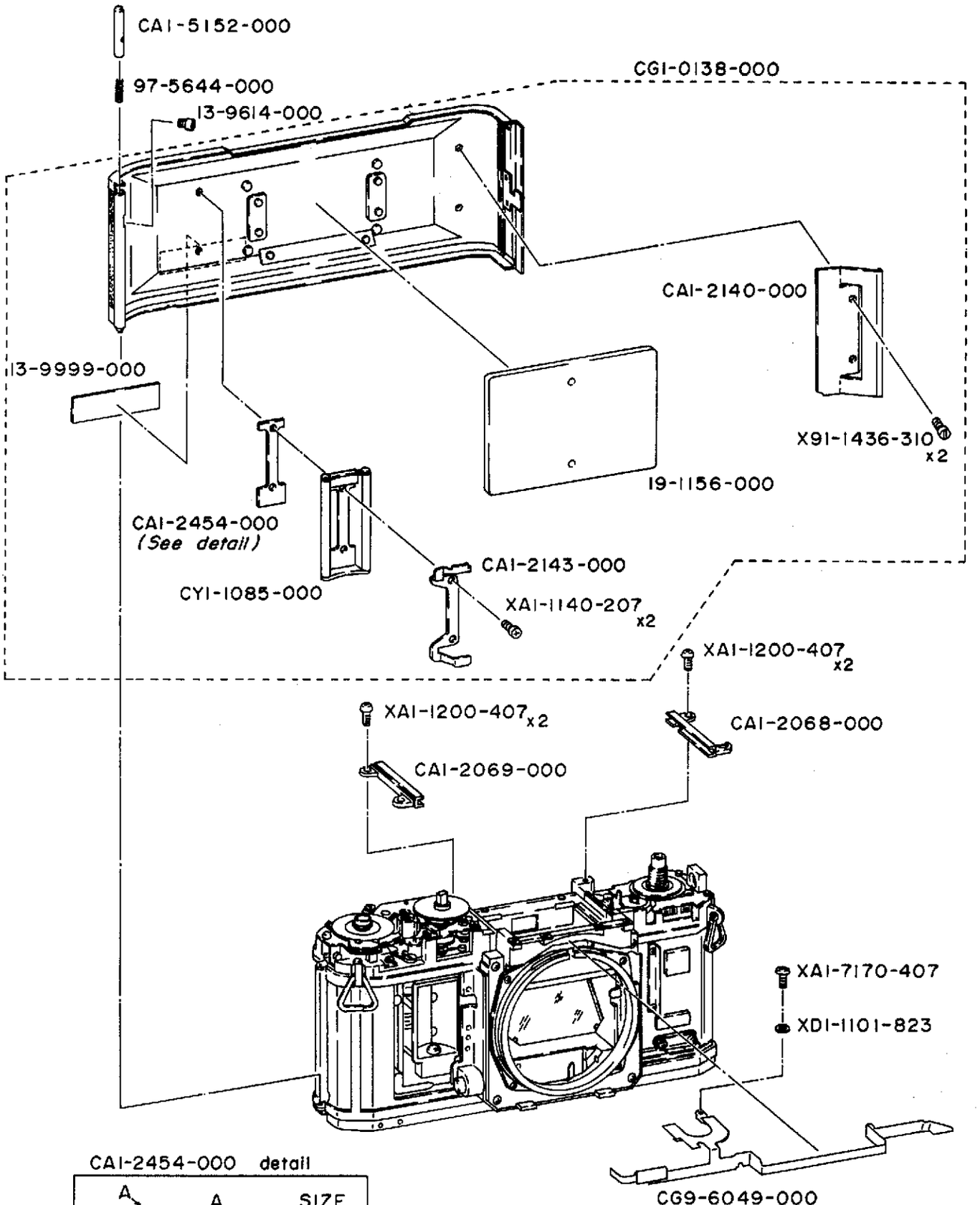
# PARTS LIST

REF.NO.C12-0751

| NEW PARTS NO. | CLASS | QTY | DESCRIPTION |
|---|---|---|---|
| CA1-1908-000 | B | 1 | COVER, BASE |
| CA1-2090-000 | D | 1 | WINDOW |
| CA1-2096-000 | E | 1 | LEVER, LOCK |
| CA1-2097-000 | C | 1 | LATCH, SAFETY |
| CA1-2098-000 | E | 1 | CONE |
| CA1-2102-000(XXX) | D | 1 | WASHER |
| CA1-2103-000 | D | 1 | NUT |
| CA1-2108-000 | C | 1 | WASHER |
| CA1-2112-000 | B | 1 | KNOB, REWIND CRANK |
| CA1-2113-000 | B | 1 | SCREW |
| CA1-2148-000 | D | 1 | SPACER |
| CA1-2151-000 | A | 1 | CAP, M.D.COUPLER |
| CA1-2152-000 | A | 1 | CAP, AE COUPLER |
| CA1-2153-000 | B | 1 | CAP, CARTRIDGE COMPARTMENT |
| CA1-2401-000 | C | 1 | SPACER |
| CA1-2452-000(XXX) | D | 1 | SPACER |
| CA1-2453-000(XXX) | D | 1 | WASHER |
| CA1-2474-000 | A | 1 | CAP, P.C.TERMINAL |
| CA1-5054-000 | C | 1 | COLLAR |
| CF1-0722-000 | C | 1 | DIAL, ASA |
| CF1-0732-000 | D | 1 | CLUTCH, REWIND |
| CF1-0801-000 | C | 1 | DIAL ASS'Y, ASA(WHITE) |
| CF1-0802-000 | C | 1 | TERMINAL, P.C. |
| CG9-0158-000 | C | 1 | LOCK ASS'Y, SAFETY |
| CG9-0167-000 | C | 1 | CRANK UNIT, REWIND |
| CS1-1250-000 | E | 1 | BUSHING |
| CS1-5475-000 | E | 1 | SPRING, COIL |
| CS1-5476-000 | E | 1 | SPRING, COIL |
| CS1-6381-000 | E | 1 | SPRING |
| CS1-6382-000 | C | 1 | SPRING |
| CS1-7283-000 | C | 1 | SPRING, FRICTION |
| CY1-1109-000 | B | 1 | COVER, TOP(LEFT) |
| CY1-1176-000 | C | 1 | DIAL ASS'Y, ASA(GREEN) |
| XA1-1170-229 | | 4 | SCREW |
| XA1-1170-259 | | 1 | SCREW |
| XD1-1102-121 | | 1 | RING, E |
| XD2-1100-132 | | 1 | SCREW |
| X94-1701-350 | | 2 | SCREW |
| X95-1700-540 | | 1 | WASHER |
| X98-0504-200 | | 1 | WASHER |
| X98-0504-210 | | 1 | SCREW |
| X99-0394-000 | | 1 | SCREW |
| X98-0504-240 | | 1 | WASHER |

REF. NO. C12-0751

# CANON NEW F-1




CA1-2454-000 detail

| A | SIZE |
|---|---|
| 0.1 mm | (010) |
| 0.2 mm | (020) |
| 0.3 mm | (030) |

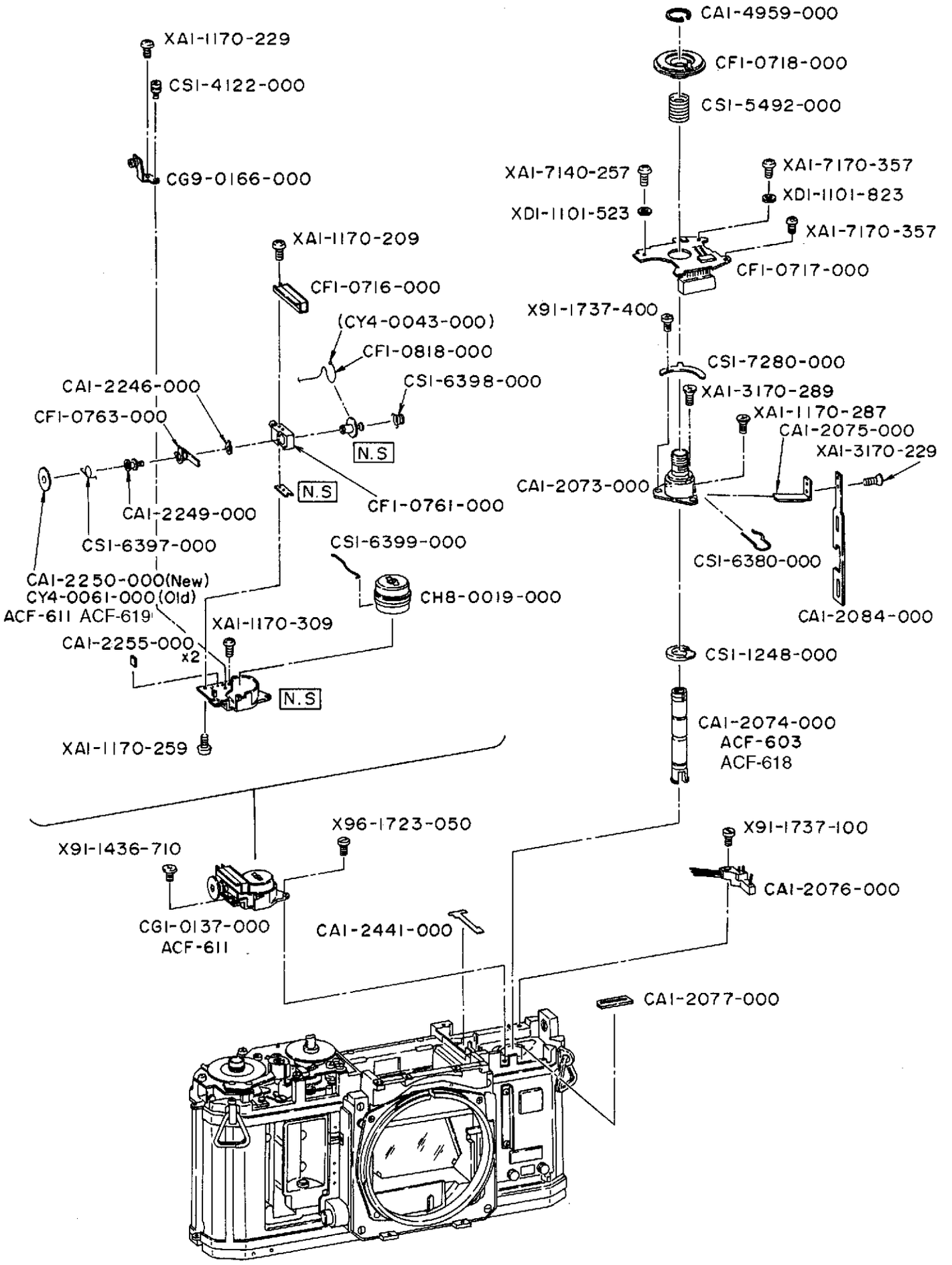
# PARTS LIST

REF.NO.C12-0751

| NEW PARTS NO. | CLASS | QTY | DESCRIPTION |
|---|---|---|---|
| 13-9614-000 | E | 1 | STOPPER |
| 13-9999-000 | E | 1 | PLATE, NAME |
| 19-1156-000 | B | 1 | PLATE, PRESSURE |
| 97-5644-000 | E | 1 | SPRING, COIL |
| CA1-2068-000 | C | 1 | RAIL(RIGHT) |
| CA1-2069-000 | C | 1 | RAIL(LEFT) |
| CA1-2140-000 | D | 1 | HOLDER, CARTRIDGE |
| CA1-2143-000 | D | 1 | PRESSURE, FILM |
| CA1-2454-000(XXX) | E | 1 | WASHER |
| CA1-5152-000 | D | 1 | SHAFT, HINGE |
| CG1-0138-000 | D | 1 | COVER UNIT, BACK |
| CG9-6049-000 | C | 1 | BOARD, PRINTED CIRCUIT |
| CY1-1085-000 | D | 1 | ROLLER ASS'Y |
| X91-1436-310 | | 2 | SCREW |
| XA1-1140-207 | | 2 | SCREW |
| XA1-1200-407 | | 4 | SCREW |
| XA1-7170-407 | | 1 | SCREW |
| XD1-1101-823 | | 1 | WASHER |

REF. NO. C12-0751

# CANON NEW F-1



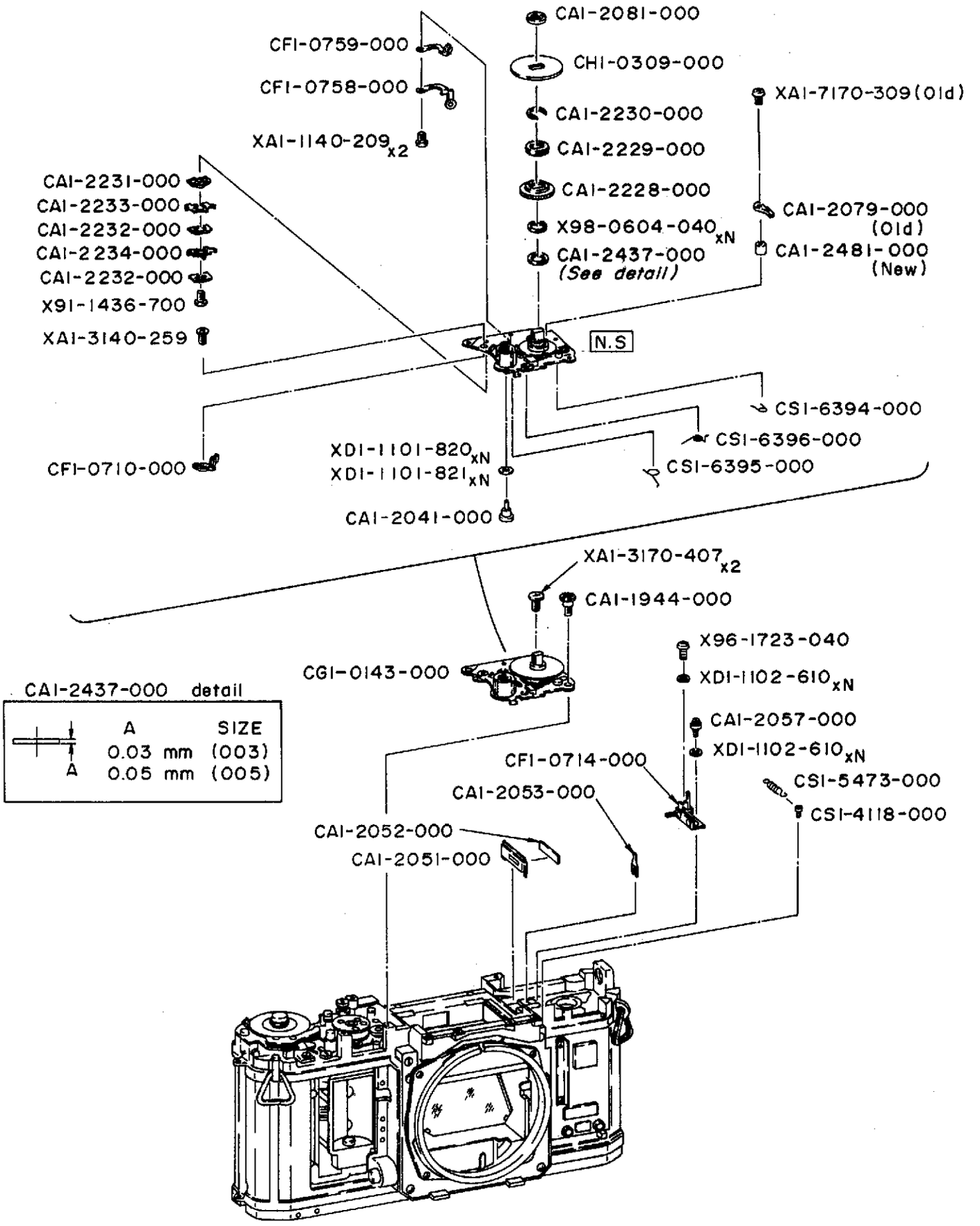
# PARTS LIST

REF.NO.C12-0751

| NEW PARTS NO. | CLASS | QTY | DESCRIPTION |
|---|---|---|---|
| CA1-2073-000 | E | 1 | HOLDER, REWIND SHAFT |
| CA1-2074-000 | C | 1 | FORK, REWIND |
| CA1-2075-000 | E | 1 | OPENER, BACK COVER |
| CA1-2076-000 | D | 1 | CONTACT |
| CA1-2077-000 | D | 1 | SEAL, CONNECTOR |
| CA1-2084-000 | E | 1 | HOOK |
| CA1-2246-000 | E | 1 | CLAW, FINDER INFORM.BRIND |
| CA1-2249-000 | E | 1 | BASE, SHUTTER SPEED INDICATION |
| CA1-2250-000 | D | 1 | INDICATOR, SHUTTER SPEED |
| CA1-2255-000 | E | 2 | STOPPER, METER NEEDLE |
| CA1-2441-000 | D | 1 | SHIELD, LIGHT |
| CA1-4959-000 | B | 1 | RING, C |
| CF1-0717-000 | C | 1 | PCB ASS'Y |
| CF1-0718-000 | C | 1 | RESISTOR, ASA |
| CF1-0761-000 | D | 1 | PULLEY, 3RD |
| CF1-0763-000 | E | 1 | BRIND, FINDER INFORMATION |
| CF1-0818-000 | C | 1 | STRING |
| CG1-0137-000 | D | 1 | INDICATOR UNIT, METER |
| CG9-0166-000 | D | 1 | PULLEY, 4TH |
| CH8-0019-000 | D | 1 | METER |
| CS1-1248-000 | E | 1 | LIFTER, HOOK |
| CS1-4122-000 | D | 1 | STUD |
| CS1-5492-000 | E | 1 | SPRING, COIL |
| CS1-6380-000 | E | 1 | SPRING |
| CS1-6397-000 | D | 1 | SPRING |
| CS1-6398-000 | D | 1 | SPRING |
| CS1-6399-000 | E | 1 | SPRING |
| CS1-7280-000 | D | 1 | SPRING, PLATE |
| CY1-1148-000 | D | 1 | PRISM, FINDER INFORMATION |
| CY4-0043-000 | E | 1 | THREAD |
| CY4-0061-000 | D | 1 | INDICATOR, SHUTTER SPEED |
| X91-1436-710 | | 1 | SCREW |
| X91-1723-050 | | 1 | SCREW |
| X91-1737-100 | | 1 | SCREW |
| X91-1737-400 | | 1 | SCREW |
| XA1-1100-229 | | 1 | SCREW |
| XA1-1170-209 | | 1 | SCREW |
| XA1-1170-259 | | 1 | SCREW |
| XA1-1170-287 | | 1 | SCREW |
| XA1-1170-309 | | 1 | SCREW |
| XA1-3170-229 | | 1 | SCREW |
| XA1-3170-289 | | 1 | SCREW |
| XA1-7140-257 | | 1 | SCREW |
| XA1-7170-357 | | 1 | SCREW |
| XD1-1101-523 | | 1 | WASHER |
| XD1-1101-823 | | 1 | WASHER |

REF. NO. C12-0751

# CANON NEW F-1




CAI-2437-000 detail

| | A | SIZE |
|---|---|---|
| A | 0.03 mm | (003) |
| | 0.05 mm | (005) |